

FILE



**TIFFIN-SENECA**  
ECONOMIC PARTNERSHIP

Tiffin-Seneca Economic Partnership  
19 W. Market St., Suite C  
Tiffin, Ohio 44883

**Written Comments Regarding Seneca Wind Project**

Republic Wind Public Hearing

Case 17-2295-EL-BGN

September 11, 2019

Ohio Power Siting Board  
180 East Broad Street  
Columbus, OH 43215

PUCO

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Dear Ohio Power Siting Board:

I hereby submit this letter and the following Statement on the Economic Development Benefits of Wind Projects as written comments in Case 17-2295-EL-BGN, Republic Wind LLC's application to construct a wind farm in Seneca County. Given the length and complexity of this document, written testimony is our choice for providing input in this case. As described by the OPSB, the proposed Republic Wind Farm would be situated on leased private land in Adams, Pleasant, Reed, Scipio, and Thompson townships in Seneca County. The facility would consist of up to 47 wind turbines with a total generating capacity of up to 200 megawatts.

As the organization tasked with leading economic development in rural Seneca County, the Tiffin-Seneca Economic Partnership was asked to provide a statement for the Board of Seneca County Commissioners throughout 2018, and after several months of due diligence, research, and reflection, we produced this thoughtful 87-page document which on January 7, 2019 was submitted to them and which then became a public document. The Seneca Wind project and its economic development benefits are addressed specifically within this document, as are the context, caveats, and limitations of our assertions and conclusions.

In summary, we estimate the Republic Wind project would generate an estimated \$1,764,180 annually in tax revenue to be distributed among more than 20 public entities. This would total \$52,925,400 over 30 years. The project would also create 10 new permanent, full-time operational jobs at an average wage of \$28.85 per hour. The investment and tax revenue are substantially higher than the average industrial expansion in Seneca County.

This submission has been provided as part of us fulfilling our dual role as an economic development organization with respect to wind projects, as agreed upon by our Board of Directors and Executive Committee. One, to provide traditional economic development services to all legal business. Two, to serve as a subject matter expert on the economic development benefits of economic development projects. The written comments submitted fall within this second area and are a true statement of the facts as we know them with respect to the benefits of this project. The statement also describes the assumptions and limitations of our analysis.

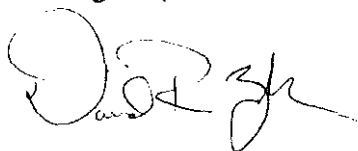
It is also important to note for the record that the Tiffin-Seneca Economic Partnership has taken a neutral stance with respect to this project and other wind projects, meaning we are not advocating for or against it as being in the public interest. The project and its multiple impacts are complex and multifaceted, and we are

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neither in a position to speak authoritatively on issues outside of economic development benefits, nor is that our role, as defined by the Board of Trustees.

If you have any questions about our testimony and/or if you think we could be helpful in any way, please do not hesitate to contact me by email at [zak@tiffinseneca.org](mailto:zak@tiffinseneca.org) or by cell at 419.912.1150.

Best regards,

A handwritten signature in black ink, appearing to read "David R. Zak", with a stylized flourish at the end.

David R. Zak  
President & CEO



Tiffin-Seneca Economic Partnership  
19 W. Market St., Suite C  
Tiffin, Ohio 44883

## Statement on the Economic Development Benefits of Wind Projects

January 4, 2019

### 1. Introduction

Throughout 2018, there has been a lot of discussion about the pros and cons of wind power in Seneca County, specifically about the risks, costs, benefits, and value of the two industrial wind turbine developments proposed by both Apex and sPower in Seneca County for 2019. sPower submitted their application to the Ohio Power Siting Board on July 16, 2018. Apex just resubmitted their amended application on December 26, 2018.

*At the official request of the Seneca County Commission, the Tiffin-Seneca Economic Partnership (TSEP) has been asked to issue a statement on the economic development benefits of these wind projects. This document serves as that statement, which TSEP reserves the right to revise. It seems an opportune time, as Apex has just resubmitted.*

Although much of the information we are providing here regarding those benefits is publicly available, we understand it can be helpful to have in one place. Additionally, we are providing as part of this statement comments about the qualifications of the descriptions of those benefits (what it does and does not include) as well as a description of our organization and its past and current strategy development and activities with respect to wind energy since 2014.

#### 1.1 Table of Contents

• Statement	p. 1
• Socioeconomic Report – Republic Wind	p. 15
• Economic and Fiscal Impact of Seneca Wind	p. 47
• May 2018 Auditor Estimates – Republic Wind	p. 63
• May 2018 Auditor Estimates – Seneca Wind	p. 78

#### 1.2 Content Outline

The first main part of this statement (Section 2 – Projects & Benefits) will provide information on the companies (Section 2.1), the projects (2.2), economic impact studies (2.3), tax revenue (2.4), jobs (2.5), comparable projects (2.6), and aggregate numbers. This is done using a traditional economic development approach.

The second main part of this statement (Section 3 – Considerations) will provide comments on what is and (more importantly) what is not included and/or discussed in the first main part (Projects & Benefits), as well as caveats and qualifiers. It discusses benefits versus costs (3.1), incentives (3.2), different types of benefits (3.3), temporary v. long-term benefits (3.4), geographic consideration (3.5), sophistication level of the analysis (3.6), information availability and stability (3.7), as well as our best efforts (3.8).

The third main part of the statement (Section 4 – Organizational Context) provides comments on the Tiffin-Seneca Economic Development Partnership and its interaction with strategy and activity connected with wind energy. It differentiates between community and economic development (4.1), discusses the current community development plan (4.2), describes the Tiffin-Seneca Economic Partnership (TSEP, formerly SIEDC) (4.3), discusses the current “Comprehensive Economic Development Strategy” (CEDS) generally (4.4), discusses the CEDS on wind specifically (4.5), and provides a sense of how TSEP uses the CEDS as well as a quick outline to the strategy developed and some activities performed since 2015 (4.6).

### 2. Projects & Benefits

## 2.1 Company Descriptions

We often do profiles and basic research on the companies looking to do projects, and here is some basic information on the companies together with excerpts of an article for each on the companies' activities in northwest Ohio.

### Apex Clean Energy

- "Apex Clean Energy, Inc. builds, owns, and operates utility-scale wind and solar power facilities. The company provides facility layout, turbulence, wake, development cycle, pre-development, construction contracting, interconnection design, transmission system design, site civil design, systems engineering, geotechnical, turbine selection, procurement, project financing, interconnection agreement, and power purchase agreement services. It offers its services in Kansas, Colorado, Wyoming, New York, and Texas, as well as in the Netherlands. The company was founded in 2008 and is based in Charlottesville, Virginia. Apex Clean Energy, Inc. operates as a subsidiary of Apex Clean Energy Holdings, LLC." (Bloomberg)
- "Apex Clean Energy is a renewable energy firm that develops commercial-scale wind and solar energy facilities. Apex Clean Energy's headquarters is in Charlottesville, Virginia. Apex Clean Energy has a revenue of \$15M, and 232 employees. Apex Clean Energy has raised a total of \$519.3M in funding. Apex Clean Energy's main competitors are Invenergy, Geronimo Energy and Terra-Gen. As of December 2018, Apex Clean Energy has 2.7K fans on Facebook and 387 followers on Twitter." (Owler)
- The company has 64 renewable energy projects listed on their website, of which ten are solar and the remaining wind. Ten of those projects are in the Midwest and three in Ohio (Emerson Creek Wind (listed as Erie and Huron Counties), Emerson West Wind (Seneca County), and Republic Wind (Seneca County)). (Apex)
- Recent News affecting Ohio – Excerpts from S&P Global Intelligence (November 14, 2018), "Apex Clean Energy cancels Ohio wind project; suit filed over setback law."
  - Citing an unfriendly business climate for wind energy development in Ohio, private developer Apex Clean Energy Inc. has backed away from plans to build the Long Prairie Wind project.
  - The 600-MW wind farm planned for Van Wert and Mercer counties was to be complete in November 2022, according to S&P Global Market Intelligence data. The company said in a statement that Ohio's current policy environment "creates unnecessary market barriers for wind energy" and has made investment in the state a "highly risky proposition."
  - Wind energy advocates have blamed a 2014 state law that nearly tripled the property line setback distance to roughly 1,300 feet for slowing wind farm development in the Buckeye State. Attempts to ease the siting rules have failed, and Democratic gubernatorial candidate Richard Cordray, who wanted to do away with the requirement, lost the Nov. 6 election to Republican Mike DeWine, the state's attorney general.
  - Apex Clean Energy said its Ohio portfolio would provide hundreds of millions of dollars in local revenue and school funding to the state along with a low-cost power source. "Unfortunately, the state's current anti-business policies are making it necessary for us to reduce our investment exposure in the state and to choose which of our projects we continue to advance in Ohio."
  - The company also pointed to challenges presented by the transmission system around Van Wert and Mercer counties, in western Ohio bordering Indiana, for the decision to shelve the project. Apex Clean Energy said the decision will allow the company to direct more attention and resources to other Ohio projects, which include the 300-MW Emerson Creek Wind Project and 150-MW Firelands Wind Farm in Huron County, and the 197.4-MW Emerson West Wind Project and 198-MW Republic Wind Farm in Seneca County. The neighboring rural counties are in northern Ohio."

### sPower

- sPower, an AES and AIMCo company, is the largest independent solar developer in the United States. Headquartered in Salt Lake City with offices in San Francisco, Long Beach and New York City, sPower owns and operates more than 150 utility and commercial distributed electrical generation systems. sPower has deployed more than \$2 billion of capital for its solar and wind projects. With more than 13 GW between operating,

construction and pipeline, sPower is actively buying select utility-scale renewable assets in virtually any stage of development in the United States. (Business Wire)

- sPower, an AES and AIMCo company, is the largest private owner of operating solar assets in the United States. sPower owns and operates a portfolio of solar and wind assets greater than 1.3 GW and has a development pipeline of more than 10 GW. sPower is owned by a joint venture partnership between The AES Corporation (NYSE: AES), a worldwide energy company headquartered in Arlington, Virginia, and the Alberta Investment Management Corporation, one of Canada's largest and most diversified institutional investment fund managers. (sPower)
- sPower develops, owns and operates utility and commercially distributed electrical generation systems for developers and landowners. sPower was founded in 2012. sPower's headquarters is located in Salt Lake City, Utah, USA 84106. It has raised 1.3B in 3 rounds. The latest round was in Nov 2016. Some of sPower's investors include CIT Bank, CoBank ACB and Rabobank. sPower's CEO, Ryan Creamer, currently has an approval rating of 97%. 100% of the Owler community believes sPower will IPO. sPower has an estimated 250 employees and an estimated annual revenue of 30.0M. (Owler)
- The company has more than 150 renewable energy projects, with 66 operational US utility energy and 53 US distributed generation projects listed on their website. Two of the utility energy projects are wind and the rest are solar. None are in Ohio. (sPower)
- Recent News affecting Ohio – Excerpts from Norwalk (Ohio) Reflector (Nov. 21, 2018), "Plans unveiled for Emerson Creek Wind Farm near Norwalk"
  - Plans for the massive Emerson Creek Wind project — in the works since 2009 — were unveiled to the public last week during an open house at the Bronson Norwalk Conservation League.
  - Apex is the developer of the Emerson Creek project and the Republic Wind project being developed mostly in Seneca County and in Sandusky County's York Township. It also is the developer behind a project scheduled to be unveiled a year from now, the Honey Creek wind farm that'll be proposed mostly for Crawford County and a small part of Seneca.
  - Seneca also is home to the Seneca Wind project proposed over five of that county's townships by Utah-based sPower.
  - Each of the projects consists of about 65 to 85 turbines. Republic Wind and Seneca Wind are both expected to have the capacity to produce 200 megawatts of power. About 1,000 homes can be powered for every megawatt of electricity, depending of course on the size of homes and the time of year. And just because a wind farm has a capability of generating 200 mw doesn't mean it always will.
  - That doesn't make it Ohio's largest, but it puts it near the top of the list with others, such as the Blue Creek Wind Farm in Paulding and Van Wert counties, which has a rated capacity of 304 mw, and one in Hardin County that has a rated capacity of 300 mw. A cluster of four on Timber Road in Paulding County have a combined rating of nearly 425 mw generated by 182 turbines.
  - About three-quarters of the Emerson Creek project falls within Huron County, and most of the rest is planned for Erie County.
  - Only three of an expected 84 turbines associated with that project are expected to be in Seneca County, (Apex's John) Arehart said.
  - Apex wants to begin erecting Emerson Creek turbines in early 2020 and have them operational by the fall of that year, then have its Honey Creek project operational by the end of 2021, Arehart said.
  - A revised version of the Republic Wind project will be released at an open house in December, Montague said.
  - Matt Butler, Ohio Power Siting Board spokesman, said an administrative judge is setting dates for the Seneca Wind hearings, which are expected to be in January. Emerson Creek's formal application must be made to the siting board within three months now that Apex has had an open house.
  - Once the applications are in hand, the power siting board typically gives projects six to nine months of review before commencing hearings, he said.

## 2.2 Key Project Numbers

The two projects being considered in this statement are the Apex Republic Wind project and the sPower Seneca Wind project. The Emerson Creek and Honey Creek projects are not being discussed here.

Apex Republic Wind (from OPSB filing, December 2018)

- Investment: \$400 million investment (this figure from Republic Wind website; project-specific information kept confidential in all applications submitted to the OPSB, including the most recent)
- 50 turbines, not to exceed 200MW, over a 24,000-acre project area
- 30-year commitment
- 10 long-term operations jobs
- Started by Apex in August 2010
- Amended application filed with the OPSB in December 2018
- Construction to begin October 2019, if approved

sPower Seneca Wind (from 2018 OPSB application and website)

- Investment: \$280 million (\$175 million in turbines, \$60 million in construction and electrical materials, \$30 million in labor, \$15 million in project development costs)
- 85 turbines, generating 212MW, located within 56,900 acres
- 30-year commitment
- 8-10 long-term operations jobs
- Acquired from Exelon in 2017, who had purchased it from John Deere previously
- Application filed with the OPSB in July 2018
- Public hearing scheduled February 19, 2019; adjudicatory hearing scheduled March 6, 2019
- Construction would have been slated to begin in Q2 of 2019, if the OPSB would have issued a certificate in December 2018.

## 2.3 Economic Impact Studies

Both projects have economic impact studies as part of the application, and we are mentioning them here and summarizing the results.

Apex Republic Wind (p.25 of Appendix G)

- Syracuse, New York-based EDR Environmental Services performed the analysis using the National Renewable Energy Laboratory's (NREL's) Jobs and Economic Development Impact (JEDI) Land-based Wind model. It was completed in December 2018.
- Conclusions (p. 25 of Appendix G):
  - The socioeconomic effects of the Republic Wind Farm, when assessed in light of regional and local economic trends, will have a positive impact on the communities within the Study Area and across the State of Ohio. Lease payments, short- and long-term job creation, and PILOT revenues will benefit private landowners, businesses and taxing jurisdictions. The Facility is not expected to generate significant expenditures on behalf of these beneficiaries; therefore, it will have a positive impact on the social and economic conditions of these communities and across Ohio.
  - 1. Total Statewide Economic Benefit: The construction of the Republic Wind Farm is expected to produce \$41.1 million in employment earnings and \$112.2 million in total economic output. Subsequently, each year the Facility is operational it is expected to generate approximately \$2.3 million in earnings and \$5.9 million in total economic output.
  - 2. Statewide Employment Benefits: During the construction period, the Facility is expected to support demand for a total of 753 onsite, supply chain, and induced employment positions. It is expected to support a total of 41 positions during each year of its operation.

- 3. Land Lease Revenue: The development of the Facility will result in \$[Redacted] in annual lease payments made to participating landowners.
- 4. Property Tax Revenues: Construction of the proposed Republic Wind Farm will increase local government revenues through payments in lieu of taxes (PILOTs). Though the agreements outlining these payments are not yet finalized, it is estimated that annual PILOT revenues could amount to approximately \$1.2 million to \$1.8 million to be distributed to local taxing jurisdictions.”

sPower Seneca Wind (pp. 35-38, Study Appendix C)

- Matt Dadwell of Pasadena, California-based Tetra Tech did the economic impact analysis on behalf of sPower for the application using the National Renewable Energy Laboratory’s (NREL’s) Jobs and Economic Development Impact (JEDI) Land-based Wind model.
- Conclusions (p. 12 of Appendix C):
  - “The preceding analysis estimates the economic and fiscal impacts associated with construction and operation of the proposed Project at the local (Seneca County) and state levels. Impacts were estimated for each geographic area, state and county, using separate JEDI Wind Models. The results of this analysis indicate that construction and operation of the Project would provide direct employment for residents in Seneca County and elsewhere in-state, as well as support economic activity elsewhere in the local and state economies.
  - Overall, construction of the Project is estimated to support 795 total (Project Development and On-Site, Turbine and Supply Chain, and Induced) jobs in the State of Ohio, and approximately \$46.7 million in labor income, with total economic output of approximately \$132.6 million. In Seneca County, Project construction is estimated to support approximately 49 total jobs and approximately \$2.4 million in labor income, with total economic output of approximately \$7.6 million. Construction impacts would be one-time impacts that would occur only during construction.
  - Operation of the Project is estimated to support approximately 39 total (direct, indirect, and induced) jobs in the State of Ohio and approximately \$2.4 million in labor income, with total economic output of approximately \$7.8 million. In Seneca County, Project operation is estimated to support approximately 27 full-time jobs and approximately \$1.2 million in labor income, with total economic output of approximately \$4.6 million. These annual average impacts are expected to occur over the life of Project operation.
  - Seneca Wind anticipates that it will make payments in lieu of real and personal property taxes in accordance with the applicable statute (ORC 5727.75) and the Board of Seneca County Commissioners’ Office 2011), with the Project estimated to generate \$1.91 million in PILOT payments during its first year of operation, and each year thereafter. Seneca Wind also estimates that lease payments to landowners will total more than \$20 million over the life of the Project.”

## 2.4 Tax Revenue Generation

The Seneca County Auditor did an analysis in May 2018 with information provided from John Moran, then Project Manager for sPower, and Dalton Carr with Apex Clean Energy. The calculation sheets have been attached to this document, and the numbers have been interpreted below. The totals, even though the project information may have changed, line up with the estimates in the OSPB application. It is worth noting that according to the Ohio Department of Education via the Seneca County Auditor, the PILOT payments below do not impact any of the schools’ funding formula. In addition, with two economic development organizations with which we spoke, they verified that the anticipated revenue came in.

<b>Taxing District</b>	<b>Republic Wind Annual (\$ dollars)</b>	<b>Republic Wind 30 Years (\$ dollars)</b>	<b>Seneca Wind Annual (\$ dollars)</b>	<b>Seneca Wind 30 Years (\$ dollars)</b>	<b>Both Projects Annual (\$ dollars)</b>	<b>Both Projects 30 Years (\$ dollars)</b>
\$1K to General Revenue Fund	196,020	5,880,600	205,310	6,159,300	401,330	12,039,900
County General Fund	48,331	1,449,930	50,367	1,511,010	98,698	2,960,940
Opportunity Center	221,303	6,639,090	230,628	6,918,840	451,931	13,557,930
Bellevue Schools	325,001	9,750,030	-	-	325,001	9,750,030
Buckeye Central LSD	-	-	301,119	9,033,570	301,119	9,033,570
Clyde EVSD	60,588	1,817,640	-	-	60,588	1,817,640
Mohawak LSD	-	-	273,828	8,214,840	273,828	8,214,840
Old Fort LSD	81,178	2,435,340	-	-	81,178	2,435,340
Seneca East LSD	511,470	15,344,100	475,237	14,257,110	986,707	29,601,210
EHOVE Career Center	34,765	1,042,950	-	-	34,765	1,042,950
Pioneer JVSD	-	-	22,508	675,240	22,508	675,240
Vanguard JVSD	28,199	845,970	32,680	980,400	60,879	1,826,370
Adams Twp	46,112	1,383,360	-	-	46,112	1,383,360
Bloom Twp	-	-	38,933	1,167,990	38,933	1,167,990
Eden Twp	-	-	30,463	913,890	30,463	913,890
Pleasant Twp	6,133	183,990	-	-	6,133	183,990
Reed Twp	16,393	491,790	27,037	811,110	43,430	1,302,900
Scipio Twp	32,777	983,310	6,230	186,900	39,007	1,170,210
Thompson Twp	56,998	1,709,940	-	-	56,998	1,709,940
Venice Twp	-	-	14,865	445,950	14,865	445,950
Health District	7,632	228,960	7,952	238,560	15,584	467,520
Bellevue Library	7,813	234,390	-	-	7,813	234,390
Birchard Library	1,202	36,060	-	-	1,202	36,060
Mohawk Library	-	-	5,415	162,450	5,415	162,450
Seneca East Library	11,023	330,690	10,243	307,290	21,266	637,980
Tiffin-Seneca Public Library	1,725	51,750	-	-	1,725	51,750
Commission on Aging	7,632	228,960	7,952	238,560	15,584	467,520



Mental Health & Recovery	17,807	534,210	18,556	556,680	36,363	1,090,890
County Park District	12,719	381,570	13,255	397,650	25,974	779,220
Attica Venice Cemetery	-	-	4,054	121,620	4,054	121,620
AVR Fire District	16,145	484,350	41,267	1,238,010	57,412	1,722,360
AVR Jt Ambulance District	7,452	223,560	19,047	571,410	26,499	794,970
Bloom-Scipio Amb District	7,766	232,980	10,844	325,320	18,610	558,300
Tax District Totals	1,568,164	47,044,920	1,642,480	49,274,400	3,210,644	96,319,320
Revenue Totals	1,764,180	52,925,400	1,847,789	55,433,670	3,611,969	108,359,070

## 2.5 Jobs

The maintenance and operation jobs, while not large in number compared with the investment, are very much worth mentioning, especially given the level of wages:

	Republic Wind	Seneca Wind	Total – Annual	Total – 30 Years
Operation Jobs	10	11	21	21
Anticipated Payroll	\$ 600,000	\$ 590,000	\$ 1,190,000	\$35,700,000
Average Salary	\$ 60,000	\$ 53,636	\$ 56,667	
Average Wage	\$28.85	\$25.79	\$27.24	

## 2.6 Comparisons to Other Projects

It might be helpful to compare these projects to other industrial projects for the sake of comparison. A couple of random examples provided here might be illustrative. Other projects can be found on our website at [www.tiffinseneca.org](http://www.tiffinseneca.org).

### AFS 2014 Expansion

- \$16 million expansion at the Tiffin plant
- \$8 million into a plant expansion; \$8 million into new equipment
- 24 new jobs (140 maintained); \$700,000 estimated new annual payroll.
- Community Reinvestment Area tax exemption on new construction; 100%, 15 years
- \$191,000 estimated real property taxes, years 16-30. \$2.87 million estimated over 30 years.
- No taxes on tangible personal property (equipment).

### Church & Dwight 2016 Expansion

- \$2.5 million expansion
- No new construction. New equipment and rail infrastructure.
- 20 new jobs (215 maintained); \$830,000 estimated new annual payroll.
- JobsOhio provided \$170,000 in a Roadwork Development Grant; the Ohio Tax Credit Authority provided a \$75,000 Ohio Jobs Creation Tax Credit; the Ohio Rail Development Commission provided a \$100,000 grant.
- No new property taxes.

## 2.7 Aggregate Numbers (2014-2017)

Also for context, it is worth mentioning that Seneca County has placed in the top ten percent of the country for economic development for three of the last five years (2014-2018) and in the top ten percent the other two years. This is a ranking of non-metro counties (576 in the US) and the number of significant private investment projects announced or completed in a year (\$1 million or above in investment, 20 or more employees, 20,000 or more square feet of new construction). In the 2014-2017 time frame, we saw \$335 million in new investment and 1,400 new jobs. 2018 results have not yet been tabulated.

### **3. Considerations and Caveats**

In addition to describing the context of the statement, both strategically and organizationally, it is also important to provide information on what this statement looks to provide and, very importantly, what it does not look to provide, so that it can be understood appropriately.

#### **3.1 Benefits vs. Costs**

The first qualifier of this statement is that it does not do any analysis of the “economic development costs,” which is typical of economic development organizations. This is because historically, from a tax perspective, commercial and industrial development have been viewed as positive (use less in taxpayer-funded services than they provide in taxes), whereas residential has traditionally been viewed as negative (using more in services than they pay for in taxes.) This isn’t to say that residential development is a “bad thing,” it is often considered a very positive thing. It just doesn’t typically “pay for itself.” This is one of the reasons the public sector has helped fund economic development using taxpayer dollars, as private sector economic development generates additional net positive public tax dollars from the private sector to pay for public services used by residents and businesses. This also doesn’t mean that businesses don’t use public services and that different types of business use different amount of services. An assisted living facility, for example, typically uses more EMS services than an industrial development. With a low number of employees, wind energy uses much less in EMS and other services in this regard. Another example of a cost is the impact of a project on other businesses, such as in the case of other restaurants when a new restaurant appears. We do not focus on these costs in this statement.

#### **3.2 Incentives**

Another type of “cost” often involved in economic development projects are incentives. A fundamental assumption that economic development organizations make with respect to tax incentives are that the tax incentives are a major factor and/or necessary in order to make the project move forward. In that sense, with very few exceptions, they are “exemptions” and not “abatements,” meaning that there is not any existing tax revenue from the land is “foregone.” Instead, it is new revenue that is being “exempted” that wouldn’t exist but for the project. In the case of grants (which do not apply here) and other incentives, some organizations (such as JobsOhio) run Return on Investment calculations to determine when they “break even,” and when their projected net revenue is going to be over a certain term. Most economic development organizations with which we are familiar do not perform this kind of analysis.

Another aspect not considered or discussed here is the amount of the incentives, in this case the amount of the payment-in-lieu-of-taxes (PILOT) to be paid by the wind projects. Per discussions with the companies and in our estimation, these projects would likely not have developed without the Alternative Energy Zone (AEZ) incentive area put in place in Seneca County prior to 2012. The AEZ provides a pre-determined tax incentive level for any project that is appropriately qualified by the Ohio Development Services Agency. In addition, whether a different amount could have and/or should have been negotiated after the projects moved forward is a policy consideration not deemed within the scope of TSEP and therefore also not discussed here.

#### **3.3 Types of Benefits**

The second qualifier of this statement is that TSEP typically focuses on direct benefits and not indirect or induced benefits. This is also not atypical for economic development organizations, but it should be noted that economic modeling tools exist—and have been employed in this case by the wind companies—which seek to describe indirect and

induced benefits (e.g., JEDI, IMPLAN). This qualifier differentiates between the different types of benefits economic impact models typically identify - direct, indirect, and induced benefits.

- Direct economic benefits (or impacts) are those which come from the expenditures directly related to the construction and operation of a business – jobs (wages and benefits for construction and operation of the facility), fixed capital asset investment (land, building, equipment), materials and supplies.
- Indirect benefits are the economic benefits created by businesses supplying the original business (their suppliers).
- Induced benefits are the economic benefits created by employees of the original business purchasing goods and services for themselves and their household.

With wind development, landowner payments that cycle back into the economy (they are a supplier of land) can be considered *indirect economic benefits*. For example, Apex has made public on their website that the Republic Wind project will provide \$29 million in landowner payments. These are also not a focus of this statement. The project's application with the Ohio Power Siting Board does require an expert analysis of these benefits, so they will be mentioned in the Benefits section for additional context, and the studies is attached.

### **3.4 Temporary vs. Long-Term**

Apex currently has on their website that the Republic Wind project will create 100 construction jobs. Construction jobs provide a direct economic benefit, but TSEP does not report on these jobs and their impact for a few reasons, the most important of which is that they are temporary. It does not mean that they are not important, just that they are only supported by the project for the time during construction. Most of our own analysis looks at a ten, twenty, or thirty-year time horizon, and this is typical for how we talk about the economic impact of other commercial and industrial projects. We are applying the same logic here. The project's application with the Ohio Power Siting Board does require an expert analysis of these benefits, so they will be mentioned in the Benefits, and the studies are attached.

### **3.5 Local vs. State/Federal**

In addition, locally we do not consider statewide or federal impacts in what we discuss regarding specific projects, as generally those impacts do not affect the local economy in ways we can measure. For example, we do not report on statewide spinoff jobs, nor do we report on Ohio CAT (Consumer Activities Tax), income or sales tax. We do report on municipal income tax, property tax, and local sales and use tax. The project's application with the Ohio Power Siting Board does require an expert analysis of these benefits, so they will be mentioned in the Benefits section for additional context, along with the firm doing the study.

### **3.6 Simplified Estimates**

This statement does not intend to provide a detailed tax analysis, but to provide basic information for the Commissioners' considerations. It also does not do net present value calculations on these benefits. It assumes the company and project will continue to pay its tax or payment-in-lieu-of-taxes (PILOT) obligations for the term of their commitment, which is also typical. We understand this is an assumption.

### **3.7 Information Availability & Stability**

Project information can change over time. This, too, is not unusual with longer-term projects, which industrial wind turbine developments tend to be. The nature and cost of the equipment purchased and investment to be made; the anticipated job numbers, types, and payroll can change. Some information is made publicly available, and some is not. We will be using publicly available information for this statement. The amount of the investment for the Republic Wind project, for example, has been redacted from the application submitted to OPSB, so we are using the best available public information to our knowledge, which is from their website.

### **3.8 Best Efforts**

We have used best efforts to put together some useful information for the Seneca County Commissioners at their request. We do not have access to sophisticated modeling, nor do we have expertise or ability to assess larger picture impact of this or any other industry and projects. We make no claim that this information has undergone rigorous vetting by economic modelling experts and/or that it encompasses all the various aspects involved in assessing the costs and benefits of these or any other particular developments. We also do not claim to be experts in tax matters and have either used our best efforts to estimate potential financial impacts and/or worked with other officials (e.g., Seneca County Auditor) to quantitatively assess impact.

#### **4. Organizational Context**

##### **4.1 Community Development**

One thing this document does not do is provide information on the community development impact and/or overall community costs and benefits of wind. This is not a function we perform within Seneca County generally. For purposes of clarification, it might be helpful to differentiate between economic and community development. Economic development can generally be understood as private businesses investing private capital for a private purpose (generally profit), resulting in the creation and/or retention of jobs.

Community development can generally be understood as the investment of public and/or private capital for a public and/or non-commercial purpose. Understood this way, community development is a much larger umbrella concept, which includes (among other things) things such as housing, environment, education, utilities, infrastructure, open space and recreation, and housing. The current plan in use is the 2001 Seneca County Comprehensive Plan Update (CPU), and it was facilitated by and managed by the Seneca Regional Planning Commission (SRPC). The SRPC is currently leading an effort to update the plan. Community development planning also informs but does not determine public community development policy, the determination of which is the role of government and elected representatives at various levels.

##### **4.2 Comprehensive Planning**

The CPU that is currently in place was adopted by the Seneca County Commissioners on April 7, 2001. The Columbus, Ohio-based firm Burns, Bertsch & Harris created the plan, and the SRPC, together with other stakeholders, contributed to its development. These plans are expected to have a 20- to 30-year life, and a new plan is currently being facilitated by the SPRC and created by CT Consultants. Section 6 of the current CPU discusses economic development in general terms, and it lists attraction as one of the strategies with the general comments, "Broaden and diversify the economic base of the County by seeking an appropriate mix of industrial, commercial, and office uses" (p. 6.11). This is further articulated in Section 9 (Strategic Implementation), as Strategy 1.1 "Increase the economic development potential of the County," and the sub-strategy 1.1.c "Broaden and diversify the economic base of the County by seeking an appropriate mix of industrial, commercial, and office uses." The plan does not mention wind or renewable energy specifically.

It does capture some principles in its goals in Section 3 (Goals and Objectives), and again in Section 9. Goal 1 is to "Maintain and enhance the standard of living for all citizens of Seneca County" (p. 3.1), and it includes along with economic development (Strategy 1.1, p. 3.1), other elements such as housing (Strategy 1.2), open space and recreation (Strategy 1.3), historic preservation (Strategy 1.4), and maintaining the rural character of the county (Strategy 1.5). Goal 2 is to "Encourage growth that focuses upon existing urban areas and respects intrinsic values of the land" (p. 3.2). It includes encouraging growth within municipalities only (2.1), using growth management principles (2.2), farmland preservation (2.3), environmental protection (2.4), and intergovernmental cooperation (2.5). The third goal addressed infrastructure.

##### **4.3 Tiffin-Seneca Economic Partnership**

In contrast to the SRPC, the Tiffin-Seneca Economic Partnership (TSEP) is a 501c3 nonprofit created specifically in 1983 to promote economic development in Tiffin and Seneca County, Ohio, and that purpose continues to be a driving force of its day-to-day mission, which is to facilitate economic development projects in Tiffin and throughout most of Seneca

County, as well as downtown and community development projects within the City of Tiffin. We fulfill that mission using the strategic foundation of the 2011 Comprehensive Economic Development Strategy (CEDS), according to priorities determined annually by our members, and within strategic guidelines set every year by our Board of Trustees.

#### **4.4 Comprehensive Economic Development Strategy (CEDS)**

Unlike the much broader and community development oriented Comprehensive Plan Update, the CEDS is focused exclusively on economic development. The most current version (2011) replaced the previous CEDS developed in the mid-1980s and commented specifically on its purpose in the document: "This strategy is intended to position Seneca County as a 'redevelopment area', as defined by the EDA (US Dept. of Commerce Economic Development Administration), and thus to make its political subdivisions eligible to apply from the EDA Public Works and other programs." It had the secondary function of providing a "demographic and marketing profile." The CEDS committee was made up of the following people, representing a cross-section of public- and private-sector leaders in Seneca County at the time.

#### **4.5 CEDS and Wind Development**

Although the CEDS was primarily created to fulfill federal requirements in order to enable the community to pursue federal funding, it does provide a strategic framework for economic development activities and is therefore relevant to context. Importantly, it became the basis for TSEP (SIEDC at that time) strategic planning.

The CEDS does reference wind development. On page 38, one of the opportunities to grow the regional economic identified was "green business and practices, including development of wind farms and solar cells," which then was made into an objective in Goal 2 ("Attract new, diversified business activity to Seneca County"). This objective (Objective 2.2) was "Target and devote resources to new and growing markets and new lines of business that are most likely to succeed," one of six markets appearing there was "green business and wind energy." Page 63 mentions "the potential development of wind farms within the County in the near future" (p. 63), which then is more fully explained as Priority 5 under "Current Priorities," where it appears as "Preparation of County for Wind Farms."

That section is worth reprinting here in its entirety: *"There has been considerable recent discussion of the development wind farms, involving a significant number of large wind turbines located on currently agricultural or non-productive property in Seneca County. Several companies have discussed wind farm development involving sixty to eighty turbines, in both the eastern and western portions of the county, with construction crossing county boundaries into Hancock County to the west and Sandusky Counties to the east.*

*"While firm plans have not been made public, wind farm developers have been planning for their eventual development, and the County Commissioners have approved a resolution which makes the county an 'alternative energy zone' allowing wind, solar, and other energy companies eligible for state tax incentives. Preparation for these projects may require upgrading of local roadways to accommodate trucks. Thus, while the lack of firm plans makes public improvement planning difficult, the imminent development of these wind farms will undoubtedly require public improvements in the short term, to provide adequate transportation routes for the transport of turbine components. Design and funding for public improvements will likely be determined within a very short period of time, once projects and private investments are announced" (p. 69).*

#### **4.6 Strategy Development**

In 2014, the CEDS, already three years old (and most strategic plans are built to be three- to five-year documents), was starting to approach the end of its "useful life" as literal roadmap. In order to extend its life and make it useful within a current context, TSEP developed a process whereby every fall the members would prioritize the nine goals of the plan, the Board would then evaluate the overall direction of the organization, and then the Board would spend some time thinking about the top priorities for next year. Out of this, the TSEP staff would create next year's scope of work and

associated budget, which would then be discussed and approved by the Board of Trustees. This annual scope of work would, in essence, represent a current and workable tangible and actionable expression of the strategic plan.

This process has been followed every year, with strategic guidelines and a scope of work being developed preceding the calendar year of activity. The following is a quick summary of the strategy developed through that process (in the preceding fall) as well as some of TSEP's (SIEDC's) activities during that year. The activities are included here (versus in another section) because it is easier to review them here in their strategic context:

## **2015**

- **Strategy** - During the first year of the planning process (fall 2014), the members selected attraction (Goal 2) as the second most important goal for 2015, and the Board selected Objective 2.2 ("New Markets and Clusters") as the most important objective within that goal.
- **Activities** - TSEP's interface with the industry and the projects began in 2015, when we were first contacted by Apex to discuss proposed changes to setback requirements contained in House Bill 483, passed in 2014. Given the CEDS, the support of local state legislators like Bill Reineke, the limited nature of our participation, and the fact that it appeared this was needed to facilitate the project, we started to work on it.

## **2016**

- **Strategy** - The following year (fall 2015), attraction was again ranked by members as the second most important goal. The metrics (strategies) picked for that year were attraction trips, cluster report and top 20 incentives information. The top four industries identified for attraction were: food processing and agribusiness; automotive; industrial machinery and equipment; and educational services.
- **Activities**
  - SIEDC met periodically with Apex officials to receive updates.
  - On April 3, SIEDC wrote a letter of support "to whom it may concern" for the Republic Wind project. The economic development benefit paragraph read: "The purpose of SIEDC is to help create and retain jobs and investment in Tiffin and Seneca County, and over the past thirty years, we've made a lot of progress. Republic Wind represents immediate and long-term benefits for Seneca County in both of our target areas. The construction phase will create hundreds of jobs and infuse millions of dollars in investment into the county. During operations, the community will benefit from sustained tax revenue to the county for local governments and schools, plus decades of procurement, jobs, and investment."

## **2017**

- **Strategy** - Attraction was ranked the highest goal, with cluster plans (based on the aforementioned industries), a resource directory, and a cluster trip as the three top strategies, along with a resource expo and three retail attraction strategies.
- **Activities**
  - Continued to work with Apex providing any requested traditional economic development services.
  - June 7 - David Zak, along with economic development directors from Paulding, Fulton, Van Wert, Licking, Putnam and Medina Counties, spoke with state legislators about the economic development benefits of wind.
  - October 18 – gave testimony to the Ohio Senate in favor of changing setbacks. From the testimony: "It (Apex Republic Wind project) would create hundreds of jobs during construction and infuse millions of dollars in into the county. During operations, the community will benefit from sustained tax revenue for local governments and schools, plus benefit from decades of procurement, jobs, and investment."

## **2018**

- Strategy – in the fall of 2017, attraction fell to third, and the following strategies were identified specifically: branding, targeted industries, foreign direct investment, and university collaboration. In recognition of our previous activities and in order to ensure board support for Metric R read as follows: “We will continue to be a strong advocate for modifying the current wind turbine setback regulations in order to allow Apex and potentially other wind energy providers to invest.”
- Activities
  - Continued to work with Apex and started working with SPower to provide any requested traditional economic development services.
  - We met with S-Power for the first time during 2018.
  - On April 11, we joined Ohio Rep. Bill Reineke, along with the Paulding County Chamber and Paulding County Economic Development, Seneca East Local Schools, and Seneca County Commissioner Holly Stacy, and others to comment on a new report “A Tale of Two Projects,” which outlines the benefits of wind projects to Paulding County and how Seneca County has not been able to realize them.
  - In May, we started working on a paper describing the economic development benefits of wind. In the following months, we continued to get additional information regarding
  - In June, local state legislators stated they were not in support of changing the setback legislation and would not pursue it. In response, the SIEDC Board of Trustees affirmed SIEDC would continue to provide traditional economic development services for wind project, while no longer continuing to pursue a strategy of advocating changing legislation in order to help facilitate the project given the limits of our ability to advocate according to our legal counsel and given the lack of local state legislative support.
  - On July 25, we held our semi-annual Member Briefing, and one point of the presentation mentioned some of the challenges SIEDC faces as an organization, including in working with the wind industry. We affirmed that we would provide traditional economic development services in a nondiscriminatory way to all legal businesses, including the wind industry. This does not include legislative advocacy, which is not a traditional economic development service. We made this same presentation publicly to Tiffin City Council and the Seneca County Commission.
  - In the fall of 2018, we assisted SPower find an office in downtown Tiffin, and we attended the ribbon cutting for the office on December 13. We also shared a press release they had prepared, as we traditionally do with all businesses.
  - December – we drafted this document on our historical strategy, activities and economic development benefits.

## 2019 (next year)

- Strategy
  - In the Fall 2018 Member Survey, attraction (Goal 2) fell to fourth and then was not discussed in-depth at the annual board retreat, which focused on brainstorming for the top three priorities (workforce, infrastructure, and retention and expansion). The resulting approved scope for next year is very operational and tactical in nature, with improved service delivery, improved stakeholder management, and more resources being the three overarching goals.
  - It is worth mentioning that the Board approved the following delineation of our mission – what we do and what we do not do: “The mission of TSEP (what we do to fulfill our purpose) is to facilitate projects. We do work on other activities, but they all in some way help us facilitate more projects and/or facilitate them more effectively. Accordingly, TSEP will not (as a general rule) manage community events, participate in legislative advocacy, take on any new intensive grant administration (without additional resources), take on controversial positions, and/or serve as a 501c3 ‘umbrella’ organization for community events and initiatives.”
- Activities – start on January 2, 2018, but they will include providing traditional economic development services to Apex and SPower.

#### **4.8 Official Statements**

Since 2014, the TSEP (SIEDC) Board of Trustees has not made or approved any official public statements supporting or opposing any particular industry on its merits or any particular projects in terms of their overall and/or community development impact. It has, though, consistently affirmed a neutral and nondiscriminatory approach to providing traditional economic development services to all legal businesses.

#### **5. Conclusions**

The two projects under consideration would potentially generate a significant amount of tax (PILOT) revenue - \$108 million over 30 years and they would create almost 20 new, full-time jobs paying almost \$60,000 per year. Caveats and qualifiers about this statement are described throughout this document.

The Tiffin-Seneca Economic Partnership (TSEP) has been assisting the facilitation of the wind projects since at least 2015. It has been involved with the Comprehensive Economic Development Strategy and used it as a strategic foundational document since the fall of 2015, along with many others, that targeted wind energy and assisted in the creation of the Alternative Energy Zone (AEZ) in October of 2011. That AEZ has attracted wind development and has resulted in the current two (and potentially more) project moving forward. It is our view that without the AEZ, those projects would not have come to Seneca County.

We sincerely hope that this statement and the information contained therein is beneficial, helpful and meets your needs. In addition, if more specific or expert is desired, we would be happy to work with you as appropriate to identify additional ways that additional information could be provided or procured, including, but not limited to, identification of consultants with needed expertise, the creation of a Request for Proposal (RFP) and/or management of the RFP and selection process, and management of a study.



## **EXHIBIT G. Socioeconomic Report**

# **Socioeconomic Report**

## **Republic Wind Farm**

**Adams, Pleasant, Reed, Scipio, and Thompson Townships, Seneca County and  
York Township, Sandusky County**

Prepared for:



Republic Wind LLC, a subsidiary of Apex Clean Energy  
310 4<sup>th</sup> Street NE, Suite 200  
Charlottesville, VA 22902

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**December 2018**

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Figure 1: 5-Mile Study Area

Figure 2: Facility Layout

## **EXECUTIVE SUMMARY**

This socioeconomic report is prepared in support of the proposed Republic Wind Farm ("the Facility"), a wind-powered electric generation facility in Sandusky and Seneca Counties of the State of Ohio (See Figure 1). The Facility will consist of 50 turbines, along with access roads, electric collection cables, a Facility substation, laydown yards for construction staging, an operations and maintenance (O&M) facility, and up to three meteorological towers. The Facility layout is illustrated in Figure 2. The energy generated at the Facility will deliver power to a single point of interconnection (POI) on the existing Fremont Center – Tiffin Center 138 kilovolt (kV) transmission line. The Facility will have an installed capacity of up to 198 megawatts (MW) and will deliver up to 640,000 megawatt-hours (MWh) of electrical power to the regional power grid. Construction is scheduled to begin in 2020.

The focus of this report is to assess the potential socioeconomic impacts of this Facility on local municipalities within a 5-mile radius from the Facility ("the Study Area"; see Figure 1), as well as across the State of Ohio. This involves a review of the past and current demographic and economic characteristics and trends in the Study Area, which includes 23 municipalities, and (where applicable) those of the greater region. The regional economy surrounding the Study Area is shaped in large part by the agricultural industries of Erie, Huron, Sandusky, and Seneca Counties as well as the metropolitan areas in northern Ohio and further afield. Potential impacts including those to employment, earnings, and overall economic output resulting from Facility construction and operation are assessed in light of socioeconomic conditions within the State of Ohio and the Study Area.

In short, the Republic Wind Farm is expected to produce a positive economic impact throughout the state and on the communities within the Study Area. Through lease payments to private landowners, short- and long-term job creation, and tax payments to each participating taxing jurisdiction, the Facility will supply a revenue stream to each of these jurisdictions without requiring significant services or expenditures on their behalf.

## **Part I: Introduction**

This socioeconomic report is prepared in support of the proposed Republic Wind Farm ("the Facility"), a wind-powered electric generation facility in Sandusky and Seneca Counties of the State of Ohio (See Figure 1). The Facility will consist of 50 turbines, along with access roads, electric collection cables, a Facility substation, laydown yards for construction staging, an operations and maintenance (O&M) facility, and up to three meteorological towers. The Facility layout is illustrated in Figure 2. The energy generated at the Facility will deliver power to a single point of interconnection (POI) on the existing Fremont Center – Tiffin Center 138 kilovolt (kV) transmission line. The Facility will have an installed capacity of up to 198 megawatts (MW) and will deliver up to 640,000 megawatt-hours (MWh) of electrical power to the regional power grid. Construction is scheduled to begin in early 2020.

This analysis examines estimated impacts to the state and local economy generated from the construction and operation of the Facility. It includes a review of existing demographic and economic characteristics in the area, as well as several trends affecting both. When such comparison is informative, state and federal demographic and economic data are also included. Unless noted otherwise, the Study Area for this report includes the following 23 municipalities in Erie, Huron, Sandusky, and Seneca Counties; all of which are found wholly or partially within a 5-mile radius of the Facility (the Study Area):

- Village of Green Springs\*
- Village of Republic
- City of Bellevue\*
- City of Clyde
- City of Tiffin
- Adams Township
- Baliville Township
- Bloom Township
- Clinton Township
- Green Creek Township
- Groton Township
- Hopewell Township
- Jackson Township
- Liberty Township
- Lyme Township
- Norwich Township
- Pleasant Township
- Reed Township
- Scipio Township
- Sherman Township
- Thompson Township
- Townsend Township
- Venice Township
- York Township

\*Note: The Village of Green Springs is geographically split between Sandusky and Seneca Counties. The City of Bellevue is geographically split between Erie, Huron, and Sandusky Counties

Part II of this report provides an examination of population trends within the State of Ohio and the Study Area, from 1990 through 2010, including projected population growth through 2030. In addition, Part II provides data regarding the civilian labor force for 2016 by state and county (latest data available). Part III reviews the types of potential impacts that could be experienced throughout the region, including those regarding housing demand, commercial and industrial employment, and transportation networks. Part IV describes the methods of analysis of potential economic benefits provided within this report, including an overview of the Job and Economic Development Impact (JEDI) Wind Model. This model was created by MRG & Associates, under contract with the National Renewable Energy Laboratory and is an industry standard for economic impact investigation. This is followed by the JEDI results (Part V), which describes the jobs created by the construction and operation of the Facility, as well as a summary of payments to landowners as a result of land leases for turbines. Part VI reviews potential impacts of the Facility from the perspective of local taxing jurisdictions. The findings of this report are summarized in Part VII, which is followed by a bibliography of cited sources in Part VIII.

## Part II: Socioeconomic Profile

### 1. Population trends

Census data reveals that these communities have experienced a varied history of small population growth and decline over the past two decades. The 2015 population for the State of Ohio and Erie, Huron, Sandusky, and Seneca Counties is shown in Table 1 below. Ohio showed an increase in population between 2000 and 2015, however, the counties in the study area each experienced an overall decrease of equal or higher magnitude between the same duration. Huron County experienced the smallest annual rate of population decrease (-0.1%) while Erie and Seneca Counties experienced the greatest overall decrease in population, at an annual rate of 0.3%. As indicated in Table 2, many of the local municipalities also demonstrate a general decrease in population from 2000 to 2015. Notable exceptions include more urban settings, such as the Village of Green Springs, which experienced a population increase at an annual rate of 3.0% over the same time span. The City of Tiffin is the largest of the 23 municipalities within a 5-mile radius of the proposed turbines and has experienced only a small decline of growth (-0.1% annual rate) (Table 2).

**Table 1: Population Trends**

County	2000 Pop.	2010 Pop.	2015 Pop.	Annual Rate of Change (2000-2015)	Est. 2030 Pop.	% Change 2015-2030	2017 Population Density (people per square mile)
Erie County	79,551	77,079	76,141	-0.3%	72,942	-4.2%	297.5
Huron County	59,487	59,626	58,937	-0.1%	58,394	-0.9%	119.4
Sandusky County	61,792	60,944	60,187	-0.2%	58,642	-2.6%	146.6
Seneca County	58,683	56,745	55,929	-0.3%	53,361	-4.6%	101.1
State of Ohio	11,353,140	11,536,504	11,575,977	0.1%	11,805,281	2.0%	285.3

Source: U.S. Census Bureau, 2000 and 2010 Decennial Census and American Community Survey 5-Year Estimates 2011-2015. Population densities from American Community Survey 1- Year Estimates 2017. Projections derived from each jurisdiction's constant annual rate of change between 2000-2015.

For the purposes of this report, the trends experienced by each community from 2000 to 2015 are expected to continue regardless of whether the proposed Facility is built. Over the next decade, the total population within the Study Area is projected to increase by 1.3% from 2015 to 2025, from 70,791 to 71,702; mirroring the projected statewide increase of 1.4% during the same time span. Meanwhile, county population projections are expected to decline between the same time span. Seneca County is projected to experience the greatest decrease in population (-3.4%) from 2010-2025, while Huron County is projected to experience only a -0.7% decline in population during the same time span (see Table 1).



**Table 2: Population Projections**

<b>Jurisdiction within 5-Miles Radius of Facility</b>	<b>2000 Pop.</b>	<b>2010 Pop.</b>	<b>2015 Pop.</b>	<b>Annual Rate of Change (2000-2015)</b>	<b>Est. 2030 Pop.</b>	<b>% Change 2015-2030</b>	<b>2016 Population Density (people per square mile)</b>
City of Bellevue	8,193	8,282	8,109	-0.1%	8,026	-1.0%	1,335
City of Clyde	6,064	6,325	6,305	0.3%	6,560	4.0%	1,202.2
City of Tiffin	18,135	17,963	17,793	-0.1%	17,460	-1.9%	2,577.7
Adams Township	1,337	1,320	1,435	0.5%	1,544	7.6%	106.9
Balfville Township	6,395	5,985	5,911	-0.5%	5,479	-7.3%	175.1
Bloom Township	1,937	1,799	1,591	-1.2%	1,329	-16.4%	43.3
Clinton Township	4,188	4,109	4,052	-0.2%	3,922	-3.2%	130.6
Green Creek Township <sup>1</sup>	-	3,646	3,520	-0.7%	3,172	-9.9%	116.2
Groton Township	1,384	1,427	1,344	-0.2%	1,306	-2.9%	51.1
Hopewell Township	2,874	2,774	2,725	-0.3%	2,587	-5.1%	79.8
Jackson Township	1,609	1,608	1,702	0.4%	1,803	5.9%	48.0
Liberty Township	2,340	2,035	2,184	-0.4%	2,043	-6.5%	57.0
Lyme Township	968	853	690	-1.9%	516	-25.2%	35.6
Norwich Township	1,072	1,070	1,176	0.6%	1,295	10.2%	35.8
Pleasant Township	1,685	1,635	1,397	-1.1%	1,176	-15.8%	36.3
Reed Township	949	848	820	-0.9%	715	-12.8%	20.7
Scipio Township	1,831	1,729	1,704	-0.5%	1,590	-6.7%	47.2
Sherman Township	501	510	405	-1.3%	334	-17.5%	24.1
Thompson Township	1,422	1,443	1,446	0.1%	1,471	1.7%	37.2
Townsend Township	1,670	1,620	1,327	-1.4%	1,079	-18.7%	40.8
Venice Township	1,871	1,758	1,737	-0.5%	1,617	-6.9%	43.6
York Township	2,512	2,532	2,516	0.0%	2,520	0.2%	76.2
Village of Green Springs	599	738	902	3.4%	1,483	64.5%	1,567.2
Village of Republic	614	549	661	0.5%	713	7.9%	13.1
<b>Total<sup>2</sup></b>	<b>69,536</b>	<b>71,927</b>	<b>70,791</b>	<b>0.1%</b>	<b>72,079</b>	<b>1.8%</b>	<b>N/A</b>

Source: U.S. Census Bureau, 2000 and 2010 Decennial Census and American Community Survey 5-Year Estimates 2011-2015. Projections derived from each jurisdiction's constant annual rate of change between 2000-2015. Population densities from American Community Survey 1-Year Estimates 2016.

<sup>1</sup> Denotes that entity did not exist as currently structured as of April 1, 2010, Census Day, % change is calculated from 2010-2015

<sup>2</sup> Totals calculated by formula, may reflect rounding errors

Although construction employment related to the construction of the Facility will be substantial, this employment is relatively short term and is not expected to result in the permanent relocation of construction workers to the area; therefore, the Facility is not anticipated to generate significant population growth within the Study Area. The number of potential short- and long-term employment opportunities associated with the construction and operation of the Facility is discussed in further detail below.

## 2. Employment statistics

Table 3 illustrates the size of the local labor force in counties located either wholly or partially within 5 miles of the proposed Facility, as well as the broader State of Ohio. The total annual unemployment rate for Sandusky and Seneca Counties has been relatively consistent with that of the state over the last two years; however, the total annual unemployment rate for Erie and Huron Counties has been slightly higher compared to that of the state. Annual average unemployment rates have decreased both statewide and countywide from 2014 to 2016. Table 4a through Table 4e illustrates employment figures in the State of Ohio and Erie, Huron, Sandusky, and Seneca Counties broken down by sector for 2015.

**Table 3: Local Labor Force and Unemployment**

Place	Labor Force	Employed	Unemployed	Unemployment rate	Unemployment rate, 2015 (annual)	Unemployment rate, 2014 (annual)
Erie County	37,127	35,100	2,027	5.5%	5.5%	6.4%
Huron County	27,864	26,063	1,801	6.5%	6.6%	8.0%
Sandusky County	30,908	29,465	1,443	4.7%	4.8%	5.7%
Seneca County	27,164	25,855	1,309	4.8%	4.8%	5.7%
State of Ohio	5,713,088	5,430,790	282,298	4.9%	4.9%	5.8%

Note: Not Seasonally Adjusted; Source: U.S. Bureau of Labor Statistics, 2016.

**Table 4a: Employment and Payroll by NAICS Sector in the State of Ohio**

<b>NAICS code description</b>	<b>Paid employees for pay period including March 12, 2015</b>	<b>First-quarter payroll (\$1,000)</b>	<b>Annual payroll (\$1,000)</b>	<b>Total establishments</b>
Total for all sectors	4,719,985	52,632,423	213,161,303	251,668
Agriculture, forestry, fishing and hunting	1,204	8,631	39,876	269
Mining, quarrying, and oil and gas extraction	12,932	209,203	782,917	743
Utilities	23,839	772,796	2,334,102	667
Construction	179,883	2,139,534	10,690,205	19,731
Manufacturing	663,884	9,079,228	36,324,428	14,139
Wholesale trade	235,573	3,588,415	14,334,142	14,035
Retail trade	565,140	3,521,203	14,591,663	36,339
Transportation and warehousing	171,286	1,902,972	8,103,911	7,448
Information	84,415	1,472,345	5,770,568	3,752
Finance and insurance	241,764	5,486,773	18,452,171	17,247
Real estate and rental and leasing	65,324	839,757	3,144,738	10,075
Professional, scientific, and technical services	250,042	3,924,804	16,715,335	24,087
Management of companies and enterprises	150,099	4,165,339	15,062,999	2,186
Administrative and support and waste management and remediation services	397,326	2,874,844	12,629,484	13,526
Educational services	120,934	820,867	3,369,061	3,089
Health care and social assistance	824,772	8,466,783	35,979,928	28,976
Arts, entertainment, and recreation	67,047	480,459	2,442,370	3,766
Accommodation and food services	461,895	1,580,929	6,927,919	23,697
Other services (except public administration)	202,085	1,295,507	5,456,190	27,493
Industries not classified	541	2,034	9,296	403

Source: U.S. Census Bureau, 2015

**Table 4b: Employment and Payroll by NAICS Sector in Erie County**

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll (\$1,000)	Annual payroll (\$1,000)	Total establishments
Total for all sectors	30,596	261,881	1,152,632	1,854
Agriculture, forestry, fishing and hunting	a	D	D	3
Mining, quarrying, and oil and gas extraction	115	522	2,867	5
Utilities	b	D	D	5
Construction	782	8,596	46,306	130
Manufacturing	6,718	81,201	334,553	97
Wholesale trade	1,151	12,840	57,368	67
Retail trade	4,683	24,899	108,351	306
Transportation and warehousing	618	5,963	28,668	44
Information	466	3,877	15,919	20
Finance and insurance	624	9,876	36,739	111
Real estate and rental and leasing	272	2,186	9,774	70
Professional, scientific, and technical services	623	8,602	35,667	112
Management of companies and enterprises	198	2,816	10,935	13
Administrative and support and waste management and remediation services	611	4,248	21,754	80
Educational services	356	2,029	8,349	25
Health care and social assistance	4,886	46,861	201,401	221
Arts, entertainment, and recreation	1,272	20,713	106,854	71
Accommodation and food services	6,017	19,665	97,837	267
Other services (except public administration)	1,134	5,377	23,546	204
Industries not classified	7	19	24	3

a: 0-19 employees

b: 20-99 employees

D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, 2015

**Table 4c: Employment and Payroll by NAICS Sector in Huron County**

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll (\$1,000)	Annual payroll (\$1,000)	Total establishments
Total for all sectors	16,689	145,737	668,873	1,132
Agriculture, forestry, fishing and hunting	a	D	D	2
Mining, quarrying, and oil and gas extraction	-	-	-	-
Utilities	b	D	D	3
Construction	1135	13530	96336	128
Manufacturing	4895	53,647	231,826	86
Wholesale trade	631	6,764	30,745	49
Retail trade	2,157	12,227	52,130	174
Transportation and warehousing	798	8,651	39,183	38
Information	135	1,607	6,731	17
Finance and insurance	428	4,878	18,711	72
Real estate and rental and leasing	143	965	4,127	43
Professional, scientific, and technical services	406	3,306	13,984	80
Management of companies and enterprises	b	D	D	2
Administrative and support and waste management and remediation services	371	1,749	8,354	39
Educational services	85	330	1,455	10
Health care and social assistance	2743	27,162	115,689	98
Arts, entertainment, and recreation	110	717	3,590	16
Accommodation and food services	1,555	4,036	18,370	111
Other services (except public administration)	986	4,750	20,282	163
Industries not classified	a	D	D	1

a: 0-19 employees

b: 20-99 employees

D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, 2015

**Table 4d: Employment and Payroll by NAICS Sector in Sandusky County**

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll (\$1,000)	Annual payroll (\$1,000)	Total establishments
Total for all sectors	23,195	199,723	848,385	1,321
Agriculture, forestry, fishing and hunting	4	36	736	4
Mining, quarrying, and oil and gas extraction	c	D	D	3
Utilities	43	1021	3752	4
Construction	951	8,820	50,951	145
Manufacturing	9,031	98,612	406,383	106
Wholesale trade	699	7,696	31,861	53
Retail trade	2,491	14,558	60,862	197
Transportation and warehousing	915	9,831	42,732	56
Information	144	1,266	5,497	12
Finance and insurance	488	5,581	21,429	79
Real estate and rental and leasing	166	1,063	4,345	37
Professional, scientific, and technical services	404	3,612	15,089	77
Management of companies and enterprises	129	2,197	10,360	5
Administrative and support and waste management and remediation services	736	5,645	23,072	60
Educational services	65	267	1,136	9
Health care and social assistance	3,467	25,906	108,764	176
Arts, entertainment, and recreation	254	887	4,726	24
Accommodation and food services	1,983	5,105	23,744	120
Other services (except public administration)	1,049	4,924	20,948	153
Industries not classified	a	D	D	1

a: 0-19 employees

c: 100-249 employees

D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, 2015

**Table 4e: Employment and Payroll by NAICS Sector in Seneca County**

<b>NAICS code description</b>	<b>Paid employees for pay period including March 12, 2015</b>	<b>First-quarter payroll (\$1,000)</b>	<b>Annual payroll (\$1,000)</b>	<b>Total establishments</b>
Total for all sectors	17,109	135,030	571,777	1,128
Agriculture, forestry, fishing and hunting	b	D	D	2
Mining, quarrying, and oil and gas extraction	59	569	3,000	5
Utilities	101	2153	7699	7
Construction	849	7,914	42,559	117
Manufacturing	4,208	49,430	197,917	72
Wholesale trade	821	9,326	39,169	52
Retail trade	2,315	14,305	57,401	168
Transportation and warehousing	559	5,088	22,629	51
Information	137	1,095	4,228	13
Finance and insurance	409	5,251	20,931	66
Real estate and rental and leasing	79	516	2,306	27
Professional, scientific, and technical services	385	2,803	11,889	66
Management of companies and enterprises	81	1,410	6,814	7
Administrative and support and waste management and remediation services	325	2,180	11,018	39
Educational services	1697	9,624	40,030	11
Health care and social assistance	2,680	15,755	69,789	137
Arts, entertainment, and recreation	187	403	2,194	16
Accommodation and food services	1,389	3,546	16,009	106
Other services (except public administration)	805	3,447	15,121	163
Industries not classified	2	16	69	3

b: 20-99 employees

D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.

Source: U.S. Census Bureau, 2015

## **Part III: Regional Development Impacts**

The regional economy surrounding the Study Area is shaped in large part by the agricultural industries of Erie, Huron, Sandusky, and Seneca Counties. While the Study Area is predominantly rural, the City of Toledo (west of the Study Area) and the City of Cleveland (east of the Study Area), both significant metropolitan regions, are each in relative proximity to the Study Area. Erie, Huron, Sandusky, and Seneca Counties are primarily agricultural in nature. The regional context for the development of this Facility is discussed in further detail below, concentrating on three primary components: housing, commercial and industrial development, and transportation. In addition, the compatibility of the proposed Facility with regional developmental goals and plans is reviewed.

### **1. Housing**

As with all sectors of the economy, the housing market throughout the region has felt the impact of population loss. Owner-occupied vacancy rates in Erie, Huron, Sandusky, and Seneca Counties (ranging from 2.0% to 2.3%) are slightly higher than the statewide average of 1.9%. The rental vacancy rate in Huron County (11.7%), Sandusky County (9.7%), and Seneca County (7.1%) is substantially higher than the statewide average of 6.5%, while the rental vacancy rate in Erie County is only 0.1% higher than the statewide average.

Erie, Huron, Sandusky, and Seneca Counties feature a median monthly gross rent level of \$707, \$630, \$634, \$645, respectively, all of which is below the statewide average of \$730/month. Each county has a lower than statewide percentage of households whose rent accounts for more than 35% of their household income. In addition, the median housing values of Huron, Sandusky, and Seneca Counties are below the statewide average of \$129,900, while Erie County's median housing value (\$131,400) is slightly above the statewide average.

It is estimated that 13,631 housing units within Erie, Huron, Sandusky, and Seneca Counties are currently vacant. Given these figures, in addition to the population projections discussed in Part II of this report, it is not expected that the development of the Facility will have a significant impact on the regional housing market. While the Facility development may not represent a widespread boom for rental property owners, it is worth noting that the availability of vacant rental housing also indicates that the Facility should not have a destabilizing effect on current renters.



**Table 5: Study Area Housing Characteristics**

Municipality/County/State	Total housing units	Occupied units	Vacant units	Vacancy rate		Median housing value of owner-occupied units	Median gross rent (monthly)	% of households with gross rent > 35% of household income
				Home - owner	Rental			
Village of Green Springs	265	256	9	0.0%	0.0%	\$82,700	\$835	52.9%
Village of Republic	2757	257	18	3.3%	0.0%	\$78,000	\$736	23.7%
City of Bellevue	3,648	3,220	428	3.2%	14.3%	\$96,000	\$637	22.2%
City of Clyde	2,806	2,484	322	5.4%	4.6%	\$94,900	\$630	42.2%
City of Tiffin	7,403	6,593	810	1.6%	9.1%	\$91,600	\$657	36.4%
Adams Township	585	529	56	0.0%	0.0%	\$131,300	\$647	10.8%
Bailville Township	2,898	2,638	260	1.6%	16.8%	\$143,500	\$683	31.9%
Bloom Township	664	630	34	0.0%	9.5%	\$84,800	\$539	38.0%
Clinton Township	1,912	1,812	100	2.2%	3.9%	\$135,400	\$639	34.1%
Green Creek Township	1,478	1,427	51	0.0%	0.0%	\$97,100	\$650	6.9%
Groton Township	570	553	17	0.0%	0.0%	\$145,700	(x)	0.0%
Hopewell Township	1,167	1,017	150	0.0%	0.0%	\$114,800	\$752	19.0%
Jackson Township	651	596	55	0.9%	0.0%	\$126,500	\$621	48.1%
Liberty Township	925	863	62	2.6%	0.0%	\$83,700	\$659	48.2%
Lyme Township	296	288	8	0.0%	0.0%	\$153,500	(x)	0.0%
Norwich Township	439	414	25	0.0%	22.7%	\$126,300	\$821	89.9%
Pleasant Township	622	547	75	3.4%	0.0%	\$125,000	\$784	7.0%
Reed Township	346	310	36	0.0%	0.0%	\$95,000	\$1,043	15.9%
Scipio Township	769	702	67	1.0%	0.0%	\$123,000	\$715	34.5%
Sherman Township	182	167	15	0.0%	0.0%	\$138,300	(x)	0.0%
Thompson Township	522	455	67	7.3%	0.0%	\$131,800	(x)	(x)
Townsend Township	713	480	233	12.6%	21.8%	\$125,700	\$639	0.0%
Venice Township	857	697	160	7.5%	13.3%	\$88,300	\$700	25.8%
York Township	1,013	951	62	0.0%	0.0%	\$138,400	\$695	31.7%
Erie County	37,739	31,767	5,972	2.1%	6.4%	\$131,400	\$707	32.8%
Huron County	25,134	22,527	2,607	2.0%	11.7%	\$116,100	\$630	33.4%
Sandusky County	26,257	23,626	2,631	2.3%	9.7%	\$110,100	\$634	39.4%
Seneca County	23,959	21,538	2,421	2.1%	7.1%	\$96,900	\$645	36.3%
Ohio Statewide	5,140,902	4,585,084	555,818	1.9%	6.5%	\$129,900	\$730	40.3%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates 2011-2015. (x) = data unavailable

## **2. Commercial and Industrial Development**

The diversification of Ohio's energy portfolio will have significant and positive economic impacts beyond a reduced dependence on coal imported from outside of the state. The Environment Ohio Research & Policy Center estimated that if the State of Ohio increased wind power production to 20% of the state's total energy portfolio by 2020, such development would create 3,100 permanent, full-time positions within the state, and result in cumulative wages totaling \$3.7 billion. This same analysis estimated that such a commitment would result in an increase in gross state product of approximately \$8.2 billion by 2020 (Environment Ohio, 2007).

These impacts are principally due to the impact of wind energy development on the manufacturing sector. The State of Ohio is uniquely positioned to take advantage of advanced manufacturing opportunities for the development and distribution of wind power technology, according to the Renewable Energy Policy Project's (2004) report, "Wind Turbine Development: Location of Manufacturing Activity." This analysis estimates that if the United States were to invest \$50 billion into 50,000 MW of new wind power production, Ohio manufacturers could stand to create 11,688 jobs in wind turbine and related manufacturing, accounting for 1.95% of the total investment; by way of comparison, the American Wind Energy Association estimates that the State of Ohio alone has enough wind resources to generate nearly 359 MW at 80m hub height and 110,439 MW at 110m hub height of onshore wind energy (AWEA, 2015).

The Environmental Law & Policy Center estimated that the State of Ohio is currently home to 106 wind power supply chain businesses, providing 1,000 to 2,000 jobs throughout the state (ELPC, 2011). Wind energy technology manufacturing opportunities include rotors, controls, drive trains, generators, and towers. Several of these manufacturers and other wind power-related businesses are located in the Greater Cleveland Region (AWEA, 2015).

Specific short- and long-term economic impacts of this Facility on commercial and industrial development throughout the region are described in further detail in Part V of this report.

## **3. Transportation**

The region surrounding the Facility features numerous Interstates, U.S. and State highways, as well as county and local roadway networks, in addition to freight rail lines and small airports. These facilities are described in further detail below. The main transportation route to the Facility is I-80/90 (Ohio Turnpike), which runs just north of the 5-mile Study Area. U.S. Route 20 (north) and State Route 4 (east) run adjacent to the Facility. State Routes 53 and 269 provide direct access into the Facility. These and other primary routes facilitate transportation between the Facility and the surrounding metropolitan areas.

Workers coming to and from the site will most likely enter via State Route 4 or 20 from I-80/90. Construction traffic bound for the substations will likely use State Route 53 as the primary route, while traffic bound for the Operations and Maintenance area will most likely use U.S. Route 20 as the primary route. The proposed Facility is not expected to cause any substantial disruption to major transportation corridors serving the Study Area.

Freight rail lines connect several of the municipalities throughout the Study Area. CSX and Norfolk Southern operate the majority of Ohio's freight rail system, although smaller operators such as Ashland Railway, Northern Ohio and Western Railway, and Wheeling and Lake Erie Railway also operate in the area. Study Area municipalities connected to freight rail lines include the Cities of Bellevue, Clyde, and Tiffin, the Townships of Adams, Ballville, Bloom, Clinton, Green Creek, Groton, Hopewell, Jackson, Liberty, Lyme, Norwich, Pleasant, Reed, Scipio, Thompson, Venice, and York, and the Village of Green Springs. The rail system may be used for the transportation of a very small number of turbine component and equipment suppliers, but the Applicant does not anticipate making any modifications to the system.

The Study Area is also in proximity to the Huron County Airport, the Sandusky County Regional Airport, the Seneca County Airport, the Bandit Field Airport, the Fremont Airport, the Fostoria Airport, the Welker Airport, and the Willard Airport. Construction and operation of the Facility will be designed according to Federal Aviation Administration (FAA) standards and are not expected to result in any adverse impacts to the regional air transportation network. The Applicant will file a notice of proposed construction or alteration (Form 7460-1) with the FAA to confirm the structure will not result in a substantial adverse impact.

#### **4. Local and Regional Plan Compatibility**

Several of the municipalities within the five-mile study area have adopted comprehensive land use plans, strategic downtown plans, and/or economic development plans. Each of these are summarized below:

- City of Bellevue Vision 2025 Comprehensive Master Plan: This plan, adopted in 2005 by the Bellevue City Council, identifies the need for a 20-year vision, in which the issues, concerns, goals, and priorities of the community are addressed through civic engagement. High-paying job creation in the manufacturing sector, as well as the retention of existing jobs and the preservation of existing farming operations are goals and issues presented in the plan (City of Bellevue, 2005). In terms of economic development, the Facility offers an opportunity for the use of local goods and services, including but not limited to labor, equipment, and maintenance. In addition, the payments associated with land leases provide additional income for landowners, including agricultural producers, and in doing so, improves the economic conditions for existing farming practices.

- **2016 City of Tiffin Downtown Strategic Growth and Development Plan:** This strategic plan complements the previously-created 2010 Strategic Downtown Tiffin Plan, which “creates urban design solutions with policy recommendations to invigorate the urban core and community as a whole, with a revitalized and enhanced downtown” (City of Tiffin, 2010). Guided by revitalization principles for downtown areas and the local economy, the plan recommends that infill development utilize alternative energy when possible and support opportunities to develop local green tech industries (City of Tiffin, 2016). While the Facility does not directly impact the downtown area, it is compatible with the strategic plan through its diversification of the region’s energy resource portfolio, adding resilience and reliability to the supply of energy resources to local businesses. The Facility also offers an opportunity for the use of local goods and services, including those provided by businesses located in the downtown area.
- **1995 Erie County Comprehensive Development Plan:** This plan “determines the immediate and future needs of the community and provides ways to allow the County to guide appropriate land uses to the most suited areas for that kind of development” (Erie County, 1995). By analyzing the existing conditions and growth trends of the County, along with issues facing the region, the plan identifies goals for future land use and policy making. The Facility is compatible with the Plan’s goal to “promote community development through the improvement of infrastructure that meets development demands”.
- **2017 Huron County Comprehensive Land Use Plan:** Originally developed in 2007 and last revised in 2017, the Huron County Commissioners, the Huron County Comprehensive plan aims to manage future growth within the County to cohesively guide development patterns over the next thirty years. A key goal is to promote Huron County as a development destination and to retain and expand existing businesses (Huron County, 2017). The Facility is compatible with this goal due to the positive impacts it will create for the local economy.
- **2013 Sandusky County Comprehensive Plan:** This plan is an update to the 2003 Comprehensive Plan and is intended to be long-range plan used to guide growth and development using current existing condition, along with updated trends and priority project. A major goal of the plan is to facilitate the economic health and growth of the County and its municipalities by expanding on the tax and employment base. Furthermore, the plan “promotes and facilitates the proper placement and provision of energy infrastructure components throughout the County, including but not limited to wind farms and solar arrays” (Sandusky County, 2013). The Facility is compatible with these goals, specifically the placement and provision of alternative energy infrastructure.

- **2011 Seneca County Comprehensive Economic Development Strategy:** The plan is intended to position Seneca County as a "redevelopment area," as defined by the EDA, and thus to make its political subdivisions eligible to apply from the EDA Public Works and other programs. As specified by the plan, "the assumptions, goals, and strategies laid out in the plan create a blueprint for the County's overall economic development and a summary of what is considered the most effective and proactive, targeted strategy to improve the economic position and climate of Seneca County" (Seneca County, 2011). The plan also specifies that the County recently approved a resolution to make Seneca County an "Alternative Energy Zone", making it eligible for state tax incentives. The Facility is compatible with the plan's priority action to improve the local economy and implement alternative energy.

The Facility is located in an area that is largely rural in nature with a majority of impacts from the Facility construction and operation occurring on land used for agriculture. The economic benefits of the turbines for local agriculturalists, as well as their overall compatibility with farming practices, will support and aid in the preservation of local farming operations. Furthermore, the jobs and economic development created by Facility may help to create and retain existing local employment opportunities. Therefore, the development of this Facility is compatible with the goals and strategies of existing local and regional plans.

#### **5. Concurrent or secondary uses**

Facility components will be located on portions of leased land with existing rural residential or agricultural uses. These existing uses are expected to continue throughout the lifetime of the Facility.

## Part IV: Assessing Job and Economic Development Impacts

### 1. Jobs and Economic Development Impact (JEDI) Model

The proposed Republic Wind Farm is anticipated to have local and statewide economic benefits. Wind power development, like other commercial development projects, can expand the local, regional, and statewide economies through both direct and indirect means. Income generated from direct employment during the construction and operation phases of the wind farm is used to purchase local goods and services, creating a ripple effect throughout the state. The Job and Economic Development Impact (JEDI) Wind model allows users to estimate exactly that; the jobs and the economic development impacts from wind power generation projects for both the construction and operation phases of the proposed Facility (NREL 2017). These economic development impacts, categorized by the levels of impact and indicators described below, include onsite jobs and earnings, economic output from these onsite earnings, local revenue/supply chain jobs and earnings, economic output from these local revenue/supply chain earnings, induced jobs and earnings, and economic output from these induced jobs and earnings. The JEDI model was created by the National Renewable Energy Laboratory (NREL), a national laboratory of the United States Department of Energy. It then calculates the aforementioned indicators for each level of impact using project-specific data provided by the Applicant and geographically-defined multipliers. These multipliers are produced by IMPLAN Group, LLC using a software/database system called IMPLAN (IMPact analysis for PLANing), a widely-used and widely-accepted general input-output modeling software and data system that tracks unique industry groups in various levels of the regional data (IMPLAN Group, 2018).

Using the JEDI wind model, this report analyzes three levels of impact that the proposed Facility may have on the economy:

**On-site labor impacts:** These are the direct impacts experienced by the companies/individuals residing in the State of Ohio engaged in the onsite construction and operation of the Facility. These values represent expenditure of dollars on labor (wages, salaries and associated expenses) by Facility onsite construction personnel as well as operation and maintenance (O&M) personnel. On-site labor impacts do not reflect material expenditures. Most other input-output models consider this level as "direct impacts", referring to changes in jobs, economic activity and earnings associated with the immediate impacts created by the investment, which would include the equipment installed onsite, the concrete used onsite, etc. However, the immediate economic impacts of the physical items used onsite, normally included in direct impacts, typically occur at some geographic distance from the project itself. Because of JEDI's focus on the local impacts of a Facility, only the labor associated with the on-site location of the Facility (Construction and Construction-Related Services) is counted at this level.

**Local revenue and supply chain impacts:** These impacts measure the estimated increase in demand for goods and services in industry sectors that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries). These measures account for the demand for goods and services such as turbine components, project analysis, legal services, financing, insurance, etc. Most other input-output models consider this level as "indirect impacts", referring to economic impacts associated with linked sectors in the economy that are upstream of the direct impacts, such as suppliers of hardware used to make the equipment installed onsite or the concrete used onsite. However, because of JEDI's focus on the local impacts of the Facility, labor for components of this Facility (e.g. turbine manufacturers) occurring at off-site locations is also counted in this level as a local revenue and supply chain impact.

**Induced impacts:** Induced impacts measure the estimated effect of increased household income resulting from the project. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels of economic impact. This reinvestment can occur anywhere within the local, regional, or state economy, on household goods, entertainment, food, clothing, transportation, etc.

Each of these three levels of impact can be measured in terms of three indicators: jobs (as expressed through the increase in employment demand), the amount of money earned through those jobs, and the overall economic output associated with each level of economic impact. These indicators are described in further detail:

**Jobs:** Jobs refer to the increase in employment demand because of facility development. These positions are measured across each level of impact, so that they capture the estimated number of jobs on site, in supporting industries, and in the businesses, that benefit from household spending. For the purposes of this analysis, this term refers to the total number of year-long full-time equivalent (FTE) positions created by the Facility. Persons employed for less than full time or less than a full year are included in this total, each representing a fraction of a FTE position (e.g. a half-time, year-round position is 0.5 FTE).

**Earnings:** This measures the wages and salary compensation paid to the employees described above.

**Output:** Output refers to the value of industry production in the state economy, across all appropriate sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector, it is equal to sales volume. For example, output would include the profits incurred by those businesses that sell electrical transmission line, concrete, or motor vehicle fuel to the Applicant.

## **2. Methodology**

Calculating the number of jobs and economic output from a proposed facility using the JEDI model is a two-step process. The first step requires a limited amount of facility-specific data inputs (such as year of construction, size of Facility, turbine size and location). For the analysis, the following data were used as facility-specific modeling inputs.

- Location: Ohio
- Year of Construction: 2020
- Total Project Nameplate Capacity: 200 MW
- Number of Turbines: 47
- Average Turbine Capacity: 4.255 MW
- Money Value (Dollar Year): 2018

Note that the Applicant presents a turbine layout of up to 50 turbines for permitting purposes, each with a nameplate capacity rating of 4.2 to 4.5 megawatts (MW). However, the total generating capacity of the Facility will not exceed 200 MW. Therefore, the number of turbines to be constructed will range between 44 and 47, depending on the model of turbine selected. Since no more than 47 turbines will ultimately be constructed, this socioeconomic report analyzes the total number of positive jobs and economic impacts produced by a 47 turbine Facility rather than a 50 turbine Facility, to avoid overestimating the Facility's economic benefits.

Using this Facility-specific data, the JEDI model then creates a list of default values, which includes project cost values, default financial parameter values, default tax values, default lease payment values, and default local share of spending values. These default values are derived from 10 years of research by NREL, and stem from various sources, including interviews and surveys from leading project owners, developers, engineering and design firms, and construction firms active in the wind energy sector. The version of the model (W9.14.18) used for the job and economic impact analysis presented here used the most currently available (2016) multiplier data specific to Ohio to estimate potential impacts on a statewide basis. The second step of the JEDI model methodology requires the review, and if warranted, the customization of default project cost values and financial parameter values to more reasonable estimates. The Applicant reviewed the default project cost values subtotaled by each of the following categories in the JEDI model: Equipment during Construction, Balance of Plant Construction, Labor during Operation & Maintenance, Materials and Services during Operation & Maintenance, Financial Parameters, Tax Parameters, Land Lease Parameters and Payroll Parameters. The Applicant reviewed the default values in November 2018 and determined whether they were appropriate for the project under review. As a result of that review, adjustments were made to specific default values (see Table 6). The remaining JEDI default values were reviewed and determined to be reasonable estimates based on the Applicant's previous experience in wind energy development.



**Table 6: Adjustments Made to Default JEDI Model Costs**

<b>JEDI Cost Items (Annual Estimates)</b>	<b>Default Value</b>	<b>Adjusted Value</b>	<b>Change</b>
Construction Equipment Costs	\$241,413,521	\$	
Construction Materials Costs	\$50,587,878	\$	
Construction Labor Total Costs	\$20,956,908	\$	
Development Costs	\$9,004,072	\$	
Sales Tax for Construction Materials and Equipment	\$15,304,784	\$	
Equity Financing Repayment Term	10 years	\$	
Taxes Per MW	\$0	\$	
Land Lease (Total Cost)	\$600,000	\$	

## Part V: Job and Economic Development Impacts on the Statewide Economy

An economic impact analysis was performed for the Republic Wind Farm (the Facility) to be constructed in 2020 with a rated capacity of 200 MW and an assumed 47 turbines, sized at 4.255 MW. The analysis presented here used the most currently available (2016) multiplier data specific to Ohio to estimate potential impacts on a statewide basis. The results of this analysis, estimated for both the construction and operation phases of the proposed Facility, are illustrated in Table 7 and summarized in the narrative that follows.

**Table 7: Summary Results of Job and Economic Impact Analysis**

	<b>Jobs</b>	<b>Earnings (Millions)</b>	<b>Output (Millions)</b>
<b>Construction</b>			
Project Development and Onsite Labor Total	181	\$10.5	\$10.6
Construction & Interconnection Labor	180	\$10.3	-
Construction Related Services	1	\$0.1	-
Turbine & Supply Chain Impacts	403	\$22.7	\$75.7
Induced Impacts	169	\$8.3	\$25.9
<b>Total Impacts</b>	<b>753</b>	<b>\$41.4</b>	<b>\$112.2</b>
<b>Annual Operation</b>			
Onsite Labor Impacts	10	\$0.6	\$0.6
Local Revenue and Supply Chain Impacts	22	\$1.2	\$3.8
Induced Impacts	9	\$0.5	\$1.5
<b>Total Impacts</b>	<b>41</b>	<b>\$2.3</b>	<b>\$5.9</b>

Source: NREL JEDI Model (version W9.14.18) (USDOE NREL, 2018)

Notes: Earnings and Output values are millions of dollars in 2018 dollars. Totals may not add up due to independent rounding. Results are based on model default values.

Demand for new jobs associated with the Facility will be created during both the initial construction period and the years following construction, in which the Facility is in operation. The money injected into the statewide economy through the creation of these jobs will have long-term, positive impacts on individuals and businesses in Ohio as it ripples through the economy.

#### **1. Statewide Job and Economic Development Impact: Construction**

Based upon JEDI model computations, it is anticipated that construction of the proposed Facility will directly generate employment of an estimated 181 FTE on-site construction and project development positions for Ohio residents, which will be for Construction and Interconnection Labor and Construction Related Services. The JEDI model estimates in a total of \$10.3 million for annual earnings of the 180 on-site construction jobs. Turbine manufacturing and supply chain industries could in turn generate an additional 403 jobs across the State of Ohio over the course of Facility construction. In addition, Facility construction could induce demand for 169 jobs statewide through the spending of additional household income. Based on the results of the model, the total impact of potentially 753 new jobs could result in up to \$41.4 million of earnings, assuming a 2018 construction schedule and wage rates consistent with statewide averages. Facility construction labor wages for similar construction positions within the North Northeastern Ohio Non-Metropolitan Area (which includes Seneca and Sandusky Counties) range from an average of \$18.18 per hour for Construction Laborers, \$24.09 for Electricians, and \$50.14 for Construction Managers (Bureau of Labor Statistics, 2016). Local, regional, and statewide employment during the construction phase will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. Facility construction will also require workers with specialized skills, such as crane operators, turbine assemblers, specialized excavators, and high voltage electrical workers. It is anticipated that many of the highly-specialized workers will come from outside the area and will remain only for the duration of construction.

In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on statewide economic output, a measurement of the value of goods and services produced and sold by backward-linked industries. As described in the definition above, output provides a general measurement of the amount of profit earned by manufacturers, retailers, and service providers connected to a given project. Based on the results of the model, the value of economic output associated with Facility construction is estimated to be \$112.2 million. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors of the statewide economy. Pursuant to Section 5727.75 of the Ohio Revised Code (ORC), the Facility may qualify for tax incentives based on the degree to which it employs in-state construction labor (see Part VI). At the time of the publication of this report, it is not yet known what portion of construction labor will be Ohio-domiciled.

## **2. Statewide Job and Economic Development Impact: Operations and Management**

Based upon JEDI model computations, the operation and maintenance of the proposed Facility is estimated to generate *10 full-time equivalent onsite jobs with combined estimated annual earnings of approximately \$0.6 million. These 10 jobs are anticipated to be comprised of Project Management, Technician, and Administrative personnel. Projected wage rates are projected to be consistent with statewide averages which are estimated to be \$17.32 per hour for Payroll and Timekeeping Clerks, \$21.78 per hour for Mechanical Engineering Technicians, and, \$45.66 for General and Operations Managers (Bureau of Labor Statistics, 2016). These 10 full-time local jobs generated by the wind energy facility comprise the Facility's direct long-term employment impact.*

*Operations and maintenance should also generate new jobs in other sectors of the economy through supply chain impacts and the expenditure of new and/or increased household earnings. Increased employment demand throughout the supply chain is estimated to result in approximately 22 jobs with annual earnings of approximately \$1.2 million. In addition, it is estimated that 9 jobs with associated annual earnings of \$0.5 million will be induced through the increased household spending associated with Facility operations. In total, while in operation, this Facility is estimated to generate demand for 41 jobs per year with annual earnings of approximately \$2.3 million. Total economic output could also increase by an estimated \$5.9 million as a result of Facility operations and maintenance.*

## **3. Land Lease Payments**

Operation of the Project will result in payment to local landowners in association with the lease agreements executed to host Project components. These annual lease and easement payments will offer direct benefits to participating landowners, which will be in addition to any income generated from the surrounding land use (e.g. agricultural production). The Applicant estimates that these payments will total approximately \$1,300,000 million on an annual basis each year the Project is in operation, although this value is contingent upon project details still in development (e.g., turbine choice and layout). The Project will also generate lease payments during the construction phase; while the value is currently unknown, the lease payments will have a beneficial impact on the local economy during construction. These lease payments will have a positive impact on the region, to the extent that landowners will spend their revenue locally.

## Part VI: Local Tax Revenues

### 1. Legislative Context

Wind energy projects in the State of Ohio can be exempted from tangible personal property and real property tax payments if they meet certain conditions. These conditions are enumerated in Section 5727.75 of the ORC. Operators of these exempted projects, known as qualified energy projects (QEP), are instead required to make annual payments in lieu of taxes (PILOT). In order to be certified as a QEP by the state, a project must meet all of the following criteria:

- an application for certification of the energy project as a QEP that complies with the requirements under Section 5727.75 of the ORC and Chapter 122:23-1 of the OAC must be submitted to the director of the Ohio Development Services Agency (ODSA) on or before December 31, 2020;
- an application under Section 4906.20 of the ORC must be submitted to the Ohio Power Siting Board (OPSB) on or before December 31, 2020;
- the county commissioners of a county in which property of the project is located must have adopted a resolution approving the application submitted to ODSA or the county commissioners must pass a resolution declaring the county an alternative energy zone (AEZ);
- at least 50% of the full-time equivalent construction and installation employees, as defined in Section 5727.75 of the ORC, must be Ohio-domiciled; and
- construction (defined as either the date the application for a certificate is filed with OPSB or the date the contract for construction or installation is entered into, whichever is earlier) must begin by January 1, 2021.

If an applicant is granted exemption from taxation for any of the tax years 2011 through 2021, the QEP will be exempt from taxation for tax year 2022 and all ensuing years if the property was placed into service before January 1, 2022. The amount of PILOT to be paid annually to the county treasurer, ranging from \$6,000 and \$8,000, is assessed per megawatt (MW) of nameplate capacity, with the rate dependent on the percentage of construction/installation employees who are domiciled in Ohio. The PILOT would be: \$6,000 per MW, if during construction the project employs 75% or more Ohio-domiciled employees; \$7,000 per MW, if during construction the project employs 60% or more Ohio-domiciled employees; and \$8,000 per MW, if during construction the project employs the minimum requirement of 50% or more Ohio-domiciled employees (Table 8). County commissioners may require an additional service payment, as long as the total of the additional payment and the PILOT do not exceed \$9,000 per MW.

**Table 8: Service Payment per Megawatt Schedule**

<b>Annual Service Payment per Megawatt of Nameplate Capacity</b>	<b>Ratio of Ohio-Domiciled Full-Time Equivalent Employees</b>
<b>\$6,000</b>	<b>75% or More</b>
<b>\$7,000</b>	<b>60% to 74%</b>
<b>\$8,000</b>	<b>50% to 59%</b>

## 2. Estimated Payments In Lieu Of Taxes

Turbines for the Republic Wind Farm are anticipated to be located in a total of five municipalities (Adams, Pleasant, Reed, Scipio, and Thompson Townships) in Seneca County and one municipality (York Township) in Sandusky County, along with four school districts (Bellevue City School District, Clyde-Green Springs Exempted Village School District, Old Fort Local School District, Seneca East Local School District). Table 9 displays the total estimated PILOT revenues to be distributed throughout all taxing jurisdictions under the four scenarios identified in the payment schedule in Section 5727.75 of the ORC.

**Table 9: Estimated Total PILOT Revenue**

<b>Total Facility capacity (MW)</b>	<b>PILOT at \$6,000/MW</b>	<b>PILOT at \$7,000/MW</b>	<b>PILOT at \$8,000/MW</b>	<b>PILOT at \$9,000/MW</b>
200	\$1,200,000	\$1,400,000	\$1,600,000	\$1,800,000

## **Part VII: Conclusion**

The socioeconomic effects of the Republic Wind Farm, when assessed in light of regional and local economic trends, will have a positive impact on the communities within the Study Area and across the State of Ohio. Lease payments, short- and long-term job creation, and PILOT revenues will benefit private landowners, businesses, and taxing jurisdictions. The Facility is not expected to generate significant expenditures on behalf of these beneficiaries; therefore, it will have a positive impact on the social and economic conditions of these communities and across Ohio.

### **1. Total Statewide Economic Benefit**

The construction of the Republic Wind Farm is expected to produce \$41.1 million in employment earnings and \$112.2 million in total economic output. Subsequently, each year the Facility is operational it is expected to generate approximately \$2.3 million in earnings and \$5.9 million in total economic output.

### **2. Statewide Employment Benefits**

During the construction period, the Facility is expected to support demand for a total of 753 onsite, supply chain, and induced employment positions. It is expected to support a total of 41 positions during each year of its operation.

### **3. Land Lease Revenues**

The development of the Facility will result in \$[REDACTED] in annual lease payments made to participating landowners.

### **4. Property Tax Revenues**

Construction of the proposed Republic Wind Farm will increase local government revenues through payments in lieu of taxes (PILOTs). Though the agreements outlining these payments are not yet finalized, it is estimated that annual PILOT revenues could amount to approximately \$1.2 million to \$1.8 million to be distributed to local taxing jurisdictions.

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## Appendix C: Economic and Fiscal Impact Study

# **Economic and Fiscal Impact of Seneca Wind**

**Seneca County, Ohio**

**July 2018**

**Prepared for  
Seneca Wind LLC**

**Prepared by**



**TETRA TECH**

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## **Introduction**

Seneca Wind LLC (Seneca Wind) is proposing to develop the Seneca Wind project (the Project) in Seneca County, Ohio. The Project is a new 212-megawatt (MW)<sup>1</sup> wind-energy facility consisting of up to 85 wind turbine generators. The Project will be located on private lands within an area of approximately 56,900 acres in Seneca County (the Project Area). Land use within the Project Area is primarily agricultural. The Project will require significant capital investment, with construction expected to take place from the second quarter through the fourth quarter of 2019.

This report, prepared on behalf of Seneca Wind, assesses the economic and fiscal impact of the Project. Regional economic impacts are assessed using the National Renewable Energy Laboratory's (NREL's) Jobs and Economic Development Impact (JEDI) Land-based Wind Model (JEDI Wind Model) and presented in terms of employment, income, and economic output. Impacts are estimated separately at the state (Ohio) and local (Seneca County) levels. The fiscal impact analysis provides an estimate of tax revenues that would be expected to accrue as a result of Project construction and operation.

The results presented in this report are indicative, preliminary estimates based on a certain set of assumptions and estimated model inputs. These assumptions and inputs are based on the best data and information available at this stage in the Project development process. These assumptions and inputs could differ from actual conditions due to unexpected events or other Project-related developments, resulting in different economic and fiscal impacts. However, this analysis is anticipated to generally reflect the order of magnitude of expected impacts.

## **State and Local Context**

### **Demographic Overview**

Seneca County is located in north-central Ohio. The county encompasses 552 square miles, the majority of which (about 80 percent) is pasture land (WSOS Community Action Group 2011). With a total estimated population of 55,243 in 2017, Seneca County ranked 47 of 88 counties in Ohio in terms of population, with an average population density of 100.3 persons per square mile (persons/square mile) compared to a statewide average of 285.3 persons/square mile (U.S. Census Bureau 2018a, 2018b).

There are eight incorporated communities in Seneca County: the cities of Tiffin and Fostoria (part) and the villages of Attica, Bettsville, Bloomville, Green Springs (part), New Riegel, and Republic. These eight communities together account for about two-thirds of total county population. Tiffin, located west of the Project area is the county seat and the largest of the eight communities, with an estimated population of 17,701, followed by Fostoria (13,397) and Green Springs (1,637). The villages of Attica and Bloomville, with respective estimated populations of 1,018 and 915, are located within the boundaries of the Project Area (U.S. Census Bureau 2018c).<sup>2</sup>

Total population in Seneca County peaked in 1980 and has been declining since. The total population identified in the last decennial census (2010) was 56,745, roughly equal to the county's population in 1955. Total population dropped by 1,938 residents or 3.3 percent from 2000 to 2010, falling by a further 1,502 residents from 2010 to 2017, a 2.6 percent decrease (U.S. Census Bureau 2018b, WSOS Community Action Group 2011). The net loss of people from 2010 to 2017 was primarily the result of net out-migration

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<sup>1</sup> The installed (nameplate) capacity would be 212 MW; however, a maximum of 200 MW would be generated per the interconnection agreement.

<sup>2</sup> The most recent population estimates for cities and towns with populations of less than 20,000 are 5-year estimates from the 2012-2016 American Community Survey (U.S. Census Bureau 2017c). Estimates are annual totals based on 5 years of data.

(more people left than moved to the county), with the county experiencing a very modest gain (20 people) through natural increase (more births than deaths) (U.S. Census Bureau 2018d).

The State of Ohio had a total estimated population of 11.66 million in 2017. Unlike Seneca County, the statewide population has been slowly growing, increasing by about 1.6 percent from 2000 to 2010, and by a further 1.1 percent from 2010 to 2017 (U.S. Census Bureau 2018a, 2018e).

### Employment and the Economy

An estimated 27,294 people were employed in Seneca County in 2016 (Table 1). Employment was concentrated in the manufacturing sector, which accounted for 16 percent of total employment compared to just 10 percent statewide. Viewed in terms of number of establishments, fabricated metal products, machinery, and transportation equipment were the main clusters of manufacturing industries in 2009 (WSOS Community Action Group 2011). Employment in Seneca County is also relatively concentrated in education, which made up 6 percent of total employment in 2016, three times the state average (Table 1). The relative importance of education reflects the presence of two universities, a career/vocational school, and several school districts within the county. Employment in Seneca County in 2016 also included a total of 1,554 construction jobs (Table 1).

**Table 1. Employment by Economic Sector, 2016**

Economic Sector	Seneca County		State of Ohio	
	Number of Jobs <sup>1</sup>	Percent of Total	Number of Jobs <sup>1</sup>	Percent of Total
Agriculture	1,120	4	87,949	1
Forestry, Fishing, and Related	(D)	na	14,314	0
Mining	176	1	34,124	0
Utilities	115	0	20,576	0
Construction	1,554	6	326,254	5
Manufacturing	4,392	16	714,829	10
Wholesale Trade	971	4	269,484	4
Retail Trade	2,929	11	698,917	10
Transportation and Warehousing	1,141	4	258,303	4
Information	280	1	86,785	1
Finance and Insurance	863	3	334,294	5
Real Estate	1,061	4	274,701	4
Professional, Scientific, and Technical Services	(D)	na	394,559	6
Management of Companies	(D)	na	145,440	2
Administrative, Waste Management, Remediation	728	3	418,477	6
Arts, Entertainment, and Recreation	295	1	137,780	2
Accommodation and Food Services	2,075	8	505,339	7
Education	1,650	6	156,783	2

**Table 1. Employment by Economic Sector, 2016**

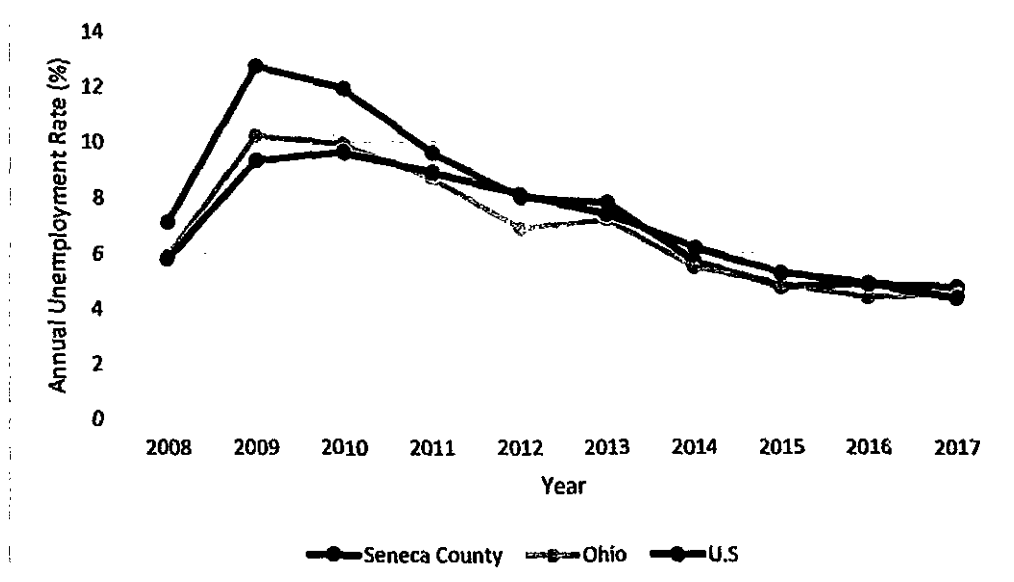
<b>Economic Sector</b>	<b>Seneca County</b>		<b>State of Ohio</b>	
	<b>Number of Jobs<sup>1</sup></b>	<b>Percent of Total</b>	<b>Number of Jobs<sup>1</sup></b>	<b>Percent of Total</b>
Health Care and Social Assistance	2,639	10	898,978	13
Other Services	1,619	6	377,953	5
Government	2,754	10	801,699	12
<b>Total Employment</b>	<b>27,294</b>	<b>100</b>	<b>6,957,538</b>	<b>100</b>
<b>Notes:</b> na – not applicable (D) Not shown to avoid disclosure of confidential information; estimates for this item are, however, included in the totals. <sup>1</sup> Employment estimates include self-employed individuals. Employment data are by place of work, not place of residence, and, therefore, include people who work in the area but do not live there. Employment is measured as the average annual number of jobs, both full- and part-time, with each job counted at full weight. Source: U.S. Bureau of Economic Analysis 2018				

The largest private employers in the county include Mercy Tiffin Hospital and Ameriwood Industries, each with more than 500 employees. A number of other businesses employ between 200 and 499 workers, including Church & Dwight, Mennel Milling, and National Machinery, among other manufacturing companies, and Heidelberg University and Tiffin University in the education sector (Seneca Industrial and Economic Development Corp 2018).

Almost 7 million people were employed in the state of Ohio in 2016. Health care and social assistance was the largest economic sector based on employment, accounting for 13 percent of total employment, followed by the government (12 percent), manufacturing (10 percent), and retail trade (10 percent) sectors (Table 1).

Annual unemployment rates for Seneca County, the State of Ohio, and the United States are presented in Figure 1. Unemployment in Seneca County peaked at the height of the recession in 2009, with an annual unemployment rate of 12.7 percent, substantially higher than the corresponding statewide (10.2 percent) and national averages (9.3 percent). Unemployment rates have declined in all three areas since 2010, with annual rates ranging from 4.4 percent (U.S.) to 4.8 percent (Seneca County) in 2017 (Figure 1). The drop in the annual unemployment rate in Seneca County has been accompanied by a drop in the number of workers in the labor force, with fewer people employed in the county in 2017 than 8 years earlier in 2009 (26,000 jobs in 2017 compared to 26,600 jobs in 2009) (Ohio Department of Job and Family Services 2018).

**Figure 1. Annual Unemployment Rates, 2008 to 2017**



Source: Ohio Department of Job and Family Services 2018

## **Tax Revenues**

In Ohio, local government entities are allowed to levy *ad valorem* property taxes on real and personal property within their jurisdictions. Real property tax rates are levied locally and vary by taxing authority. The total tax rate for a parcel includes all applicable levies for the taxing jurisdictions that the parcel falls within. Taxing jurisdictions include school districts, counties, municipalities, townships, and special service districts, with each unique combination of these jurisdictions creating a separate taxing district. Assessed values are established by the County Auditor at 35 percent of appraised market value, with all property required to be reevaluated every 6 years. Seneca County is a primarily rural county with a significant agricultural and durable goods manufacturing base. The 2016 Annual Financial Report for Seneca County noted that the county's \$1.19 billion assessed real property tax base for that year increased by 27 percent over the preceding 6 years, mainly due to residential real estate construction and reevaluations of property within Seneca County (Auditor of State 2017). A total of \$58.4 million was collected in property tax revenues in Seneca County in 2017 (Ohio Department of Taxation 2017). This total includes revenues for all taxing jurisdictions within the county, including school districts, municipalities, townships, and special service districts, as well as the county itself.

## **Methodology**

### **Economic Impact Analysis**

The economic impact of the Project will occur in two phases: 1) the initial construction phase; and 2) following construction, the operations and maintenance (O&M) phase. This report assesses both phases using the JEDI Wind Model, with a separate analysis prepared for each phase. Impacts are assessed at the state (Ohio) and county (Seneca County) levels, resulting in four separate analyses. Construction and operation of the Project will generate economic benefits in local economies through direct expenditures for materials and services in the local area, and new payroll income. Benefits will also result from payments to landowners.

Wind energy projects in the State of Ohio can be exempted from tangible personal property and real property tax payments if they meet certain conditions. The following analysis assumes that Seneca Wind

will meet these conditions and will instead make annual payments in lieu of taxes (PILOT) payments to the Seneca County Treasurer. These payments will also result in economic benefits.

### The JEDI Model

The JEDI Wind model is a spreadsheet tool that applies standard input-output multipliers and consumption patterns using multiplier data derived from the IMPLAN (Impact Analysis for PLANNing) model. IMPLAN is a commercially available economic modeling package widely used to assess the economic impacts of renewable energy and many other types of projects.

The IMPLAN model divides the economy into 536 sectors including government, households, farms, and various industries, and models the linkages between the various sectors. The linkages are modeled through input-output tables that account for all dollar flows between different sectors of the economy. Using national industry and county-level economic data derived from the U.S. Bureau of Economic Analysis, U.S. Census, and other government sources, IMPLAN models how spending in one sector of the economy is spent and re-spent in other sectors of the economy. By tracing these linkages, the model approximates the flows of initial project spending through the local economy based on the supply lines connecting the various economic sectors. These linkages vary by sector and also through regional differences in spending and employment patterns. The amount spent locally decreases with each successive transaction away from the initial expenditure due to the effects of savings, taxes, or other activities that happen outside the local economy, known as leakages.

The economic relationships modeled by IMPLAN are embedded in the multipliers used by the JEDI Wind Model, which allows the user to estimate the overall change in the economy that would result from construction and operation of a wind generating facility. The dollars spent on a project's construction and operation within a state or county are analyzed to determine the total economic impact within the local area. The direct investments in project construction and operation trigger successive rounds of spending that result in an overall increase in employment, income, and output in the local economy. Construction-related impacts are assessed as one-time impacts; O&M-related impacts are modeled as annual impacts.

The JEDI Wind Model combines user inputs and industry-average values to develop overall project costs and allocate expenditures among different sectors of the economy. NREL developed the industry average values used in the model from extensive interviews with power generation project developers, state tax representatives, and others in the appropriate industries. The model allows the user to modify the default average values to incorporate project-specific data, including construction material and labor costs, estimated payments to landowners, and local tax payments, as well as the shares of specific expenditures expected to occur within the analysis area.

The standard JEDI model assesses potential impacts at the state level, using corresponding state-level multipliers derived from IMPLAN. Using Project-specific inputs, this version of the model was used to estimate impacts at the state level for Ohio. In addition, a county-specific version of the model was developed using 2016 IMPLAN data for Seneca County and the JEDI Wind Model's User Add-in Location feature. This model was used to assess economic impacts at the county level for Seneca County.

### Impact Types

Total economic impacts reported by the JEDI Wind Model consist of three components.<sup>3</sup> These components are reported separately for the construction and operation phases of the Project.

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<sup>3</sup> These categories were re-labeled in more recent versions of the JEDI Wind model "to reflect a more accurate description of these impacts and facilitate user interpretation of model results" (NREL 2017). Project Development and On-Site Labor Impacts were previously labeled Direct Impacts. Turbine/Local Revenue and Supply Chain Impacts were identified as Indirect Impacts. The original naming conventions are more consistent with IMPLAN and other input-



#### Construction Impact Types:

- **Project Development and On-Site Labor Impacts:** This component consists of expenditures on labor (wages and salaries and associated impacts) for workers engaged in on-site construction and people providing professional services in support of the Project. Typical on-site workers include road builders, concrete-pouring companies, construction companies, tower erection crews, and crane operators. Typical professional services include Project developers, and environmental and permitting consultants.
- **Turbine and Supply Chain Impacts:** This component includes the materials and equipment necessary for the Project (e.g., turbines, blades, and towers), and the smaller components that make up the balance of the system (e.g., wiring, inverters, mountings, and transformers), as well as the supply chain of inputs required to produce these materials.
- **Induced Impacts:** These impacts result from the spending of households associated either directly or indirectly with the Project. Workers employed during construction, for example, will use their income to purchase groceries and other household goods and services. Workers at businesses that supply the Project during construction will do the same. Induced effects are sometimes referred to as “consumption-driven” impacts.

#### Operation Impact Types:

- **On-Site Labor Impacts:** This component consists of expenditures on labor (wages and salaries and associated impacts) for workers engaged in on-site operation of the Project, including site technicians, administration, and management.
- **Local Revenue and Supply Chain Impacts:** This component includes expenditures on goods and services by suppliers who provide goods and services to the Project, as well as payments related to landowner leases and property tax or PILOT contributions.
- **Induced Impacts:** These impacts result from the spending of households associated either directly or indirectly with the Project.

#### Impact Measures

Impacts are assessed using the following measures as reported by the JEDI Wind Model:

- **Employment:** Jobs are expressed in the JEDI Wind Model as FTEs, or 2,080-hour units of labor (one job equates to one full-time job for one year). Part-time or temporary jobs constitute a fraction of a job. For example, if an engineer works just 3 months on a wind project, that would be considered one-quarter of a job by the JEDI Wind Model.
- **Earnings (or labor income):** Earnings are expressed as the sum of employee compensation and proprietary income.
- **Output:** Output represents the total value of goods and services produced as a result of the Project, and serves as a broad measure of economic activity.

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output models. The first category presented here does, however, differ from the typical Direct Impacts reported by IMPLAN and other input-output models because it is based on labor expenditures only and does not include direct expenditures on materials, which are included as part of the second category reported by the JEDI Wind Model.

## **Impact Sources**

### **Construction**

Project construction is expected to take place in 2019, with construction activities expected to extend from the second quarter through the fourth quarter. Based on similar project experience, Seneca Wind estimates that Project construction will directly employ from 175 to 250 workers on-site, including construction workers, engineers, electricians, equipment operators, and a number of other contractors and service providers.

Construction costs for this analysis were provided by Seneca Wind. These cost estimates were used in conjunction with more detailed industry-average values provided by the JEDI Wind Model to adjust the average model input values to more accurately reflect the proposed Project. The largest share of the overall construction cost is the purchase and transportation of the equipment (turbines, blades, and towers) to the Project site. The JEDI Wind Model default settings assume that this component accounts for approximately 75 percent of the total construction costs. The Project-specific estimates developed by Seneca Wind indicated that this component would comprise a smaller, but still substantial share of the total Project costs. Expenditures related to this construction component are expected to occur outside the State of Ohio.

Balance-of-plant activities make up a second broad category of costs. Balance-of-plant activities assessed in the model include materials, labor, and development and other costs. The materials portion includes concrete, rebar and other construction materials as well as the electrical components and cabling required to prepare the site and connect the turbines. The labor component includes the site work, foundations, electrical, erection, and other associated labor needed to construct the Project. Development and other costs include legal fees, engineering, site certificates, and other miscellaneous expenditures. The shares of these expenditures expected to be made locally (either in-state or in Seneca County) are estimated by the JEDI Wind Model. These estimates were reviewed with adjustments made to reflect local conditions and Project-specific information.

### **Operation**

Once the construction phase is complete, O&M of the Project will continue to contribute to the local economy. The Project will provide direct O&M-related employment, and Project-related O&M expenditures will generate economic benefits in the local economy. Typical local O&M-related expenditures include vehicle-related expenditures, such as fuel costs, site maintenance, replacement parts and equipment, and miscellaneous supplies. Project-specific O&M costs developed by Seneca Wind were used for this analysis.

Lease payments to landowners will also generate annual benefits to the local economy over the life of the Project. In most cases these payments represent a net increase in income for the landowner. Each turbine occupies a relatively small footprint when compared to the site as a whole and landowners can usually continue farming and livestock operations on their property. Seneca Wind estimates that landowner payments will total more than \$20 million over the life of the Project. These estimated payments were used to modify the default values estimated by the JEDI Wind Model. The impact of these payments is assessed by the model as an increase in household income.

Wind energy projects in the State of Ohio may be exempted from tangible personal property and real property tax payments if they meet certain conditions. This analysis assumes that Seneca Wind will meet these conditions and will instead make an annual PILOT payment of \$9,000 per MW (as discussed below).

## **Economic Impacts**

Construction and operation related impacts are presented below for Ohio and Seneca County in turn. It should be noted that impacts estimated for Seneca County are substantially lower than those modeled for the state as a whole because there are greater leakages of expenditures at the county level, resulting in

larger benefits at the state level. Further, the state-level evaluation also captures Project-related spending elsewhere in Ohio (i.e., outside Seneca County).

### **Construction Phase Impacts in the State of Ohio**

Estimated construction phase impacts for the State of Ohio are summarized in Table 2. These estimates are one-time impacts developed using the JEDI Wind Model for Ohio. Job estimates are presented in FTEs, with each identified job representing 12 months (2,080 hours) of employment. Construction of the Project is expected to involve 99 on-site FTE jobs that would be filled by Ohio residents. Additional on-site positions that would be filled by out-of-state workers are not included in these estimates. Spending by out-of-state workers is, however, captured in the induced impact estimates. On-site jobs expected to be filled by Ohio workers include those associated with site work, foundations, electrical work, tower erection, and other associated labor needed to construct the plant. In addition, an estimated 22 construction-related service positions would be filled by Ohio workers. Jobs falling under the category of construction-related services include civil and electrical engineers, attorneys, and permitting specialists. Workers with more specialized skills, such as turbine assemblers, crane operators, and high voltage electrical workers are expected to come from outside the state, remaining only for the duration of their employment.

**Table 2. Construction Phase Impacts in Ohio**

<b>Impact Type/Measure</b>	<b>Jobs<sup>1</sup></b>	<b>Earnings (\$ million)<sup>2</sup></b>	<b>Output (\$ million)<sup>2</sup></b>
<b>Project Development and Onsite Labor Impacts</b>	<b>121</b>	<b>\$8.89</b>	<b>\$10.72</b>
<i>Construction and Interconnection Labor</i>	<i>99</i>	<i>\$7.74</i>	<i>--</i>
<i>Construction Related Services</i>	<i>22</i>	<i>\$1.15</i>	<i>--</i>
<b>Turbine and Supply Chain Impacts</b>	<b>479</b>	<b>\$27.23</b>	<b>\$90.75</b>
<b>Induced Impacts</b>	<b>195</b>	<b>\$10.59</b>	<b>\$31.15</b>
<b>Total Impacts</b>	<b>795</b>	<b>\$46.71</b>	<b>\$132.62</b>
<b>Notes:</b> <sup>1</sup> Jobs are FTE for a period of one year (1 FTE = 2,080 hours). Project development and onsite labor jobs and earnings include only those positions that would be filled by Ohio residents. Positions filled by out-of-state workers are not included in these estimates. Spending by out-of-state workers is, however, captured in the induced impact estimates. <sup>2</sup> Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

Construction of the Project would also support employment, income, and output elsewhere in the state, with turbine and supply chain impacts expected to support 479 jobs in Ohio and induced impacts expected to support 195 jobs (Table 2). A majority of the estimated 479 turbine and supply chain jobs are expected to occur in the construction sector as a result of in-state expenditures on materials, specifically concrete and rebar, equipment, roads, and site preparation. The total also includes jobs in the retail, professional services, and manufacturing sectors, based on expenditures on materials, as well as estimated in-state expenditures on balance-of-plant labor (for example, foundation and electrical work, hauling, and tractor operation). Overall, construction of the Project is expected to support 795 total jobs in Ohio and approximately \$46.7 million in earnings, with total output of approximately \$132.6 million.

### Annual Operation Phase Impacts In the State of Ohio

Estimated operation phase impacts for the State of Ohio are summarized in Table 3. These estimates are annual average impacts developed using the JEDI Wind Model for Ohio. Operation of the Project is expected to provide direct employment for 11 workers, all of whom would reside in Ohio. Operation and maintenance of the Project would also support employment, earnings, and output elsewhere in the state, with local revenue and supply chain impacts expected to support 14 jobs in Ohio and induced impacts expected to support an additional 14 jobs (Table 3). Overall, operation of the Project is expected to support 39 total jobs in Ohio and approximately \$2.4 million in earnings, with total output of approximately \$7.8 million. These annual average impacts are expected to occur over the life of Project operation.

**Table 3. Annual Operation Phase Impacts In Ohio**

Impact Type/Measure	Jobs <sup>1</sup>	Earnings (\$ million) <sup>2</sup>	Output (\$ million) <sup>2</sup>
Onsite Labor Impacts	11	\$0.60	\$0.60
Local Revenue and Supply Chain Impacts	14	\$0.94	\$4.73
Induced Impacts	14	\$0.82	\$2.42
<b>Total Impacts</b>	<b>39</b>	<b>\$2.36</b>	<b>\$7.75</b>
Notes:			
<sup>1</sup> Jobs are FTE for a period of one year (1 FTE = 2,080 hours).			
<sup>2</sup> Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

### Construction Phase Impacts In Seneca County, Ohio

The Project's estimated construction phase impacts for Seneca County are summarized in Table 4. These estimates are one-time impacts estimated using a county-specific version of the JEDI Wind Model that was developed using 2016 IMPLAN data for Seneca County and the JEDI Wind Model's User Add-in Location feature. Construction of the Project is expected to directly employ approximately 10 workers from Seneca County on-site during the construction period. Positions filled by workers from elsewhere in Ohio and out-of-state are not included in these estimates. Spending by non-resident workers in Seneca County is, however, captured in the induced impact estimates.

The construction and interconnection labor estimates presented in Table 4 are conservative estimates and assume that only a small share of the construction workers estimated to be hired in-state (i.e., workers normally resident in Ohio) would be hired from within Seneca County. These estimates are likely conservative because an estimated annual average of 1,554 construction jobs were identified in Seneca County in 2016 (Table 1), which suggests that a sizeable construction workforce exists within the county. These workers likely have the necessary skills to fill on-site jobs associated with tasks, such as site work, foundations, and general electrical work. In addition, data from the IMPLAN model indicates that an estimated 141 workers were employed in the Construction of new power and communication structures sector (the IMPLAN sector that includes construction of power plants and electric and communication transmission lines) in Seneca County in 2016. This suggests that more specialized workers may also be available for hire within the county.

Construction of the Project would also support employment, income, and output elsewhere in the county, with turbine and supply chain impacts expected to support 31 jobs in Seneca County and induced impacts expected to support an additional 9 jobs (Table 4). Similar to the construction and interconnection labor estimates, the turbine and supply chain impacts in Table 4 are likely conservative estimates because they assume that only a small share of the expenditures on materials estimated to occur in-state would occur in

Seneca County. Materials estimated to be purchased in-state include concrete and rebar, and equipment, as well as materials related to roads and site preparation. Overall, construction of the Project is expected to support 49 total jobs in Seneca County and approximately \$2.4 million in earnings, with total output of approximately \$7.6 million.

**Table 4. Construction Phase Impacts in Seneca County, Ohio**

<b>Impact Type/Measure</b>	<b>Jobs<sup>1</sup></b>	<b>Earnings (\$ million)<sup>2</sup></b>	<b>Output (\$ million)<sup>2</sup></b>
Project Development and Onsite Labor	10	\$0.77	\$0.77
Construction and Interconnection Labor	10	\$0.77	—
Construction Related Services	0	\$0.00	—
Turbine and Supply Chain Impacts	31	\$1.31	\$5.69
Induced Impacts	9	\$0.29	\$1.08
<b>Total Impacts</b>	<b>49</b>	<b>\$2.36</b>	<b>\$7.54</b>
<b>Notes:</b> <sup>1</sup> Jobs are FTE for a period of one year (1 FTE = 2,080 hours). Project development and onsite labor jobs and earnings include only those positions that would be filled by Ohio residents. Positions filled by workers from elsewhere in Ohio and out-of-state are not included in these estimates. Spending by non-resident workers in Seneca County is, however, captured in the Induced impact estimates. <sup>2</sup> Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

### **Annual Operation Phase Impacts in Seneca County, Ohio**

Estimated operation phase impacts for Seneca County are summarized in Table 5. These estimates are annual average impacts developed using the JEDI Wind Model for Seneca County. Operation of the Project is expected to provide direct employment for 11 workers, all of whom would reside in Seneca County. Project O&M would also support employment, earnings, and output elsewhere in the county, with local revenue and supply chain impacts expected to support 13 jobs in Seneca County and induced impacts expected to support an additional 4 jobs (Table 5). Estimated annual impacts include the effects of lease payments to landowners, which Seneca Wind estimates will total more than \$20 million over the life of the Project. Overall, operation of the Project is expected to support 27 total jobs in Seneca County and approximately \$1.2 million in earnings, with total output of approximately \$4.6 million. These annual average impacts are expected to occur over the life of Project operation.

**Table 5. Annual Operation Phase Impacts in Seneca County, Ohio**

<b>Impact Type/Measure</b>	<b>Jobs<sup>1</sup></b>	<b>Earnings (\$ million)<sup>2</sup></b>	<b>Output (\$ million)<sup>2</sup></b>
Onsite Labor Impacts	11	\$0.59	\$0.59
Local Revenue and Supply Chain Impacts	13	\$0.45	\$3.60
Induced Impacts	4	\$0.11	\$0.43
<b>Total Impacts</b>	<b>27</b>	<b>\$1.16</b>	<b>\$4.63</b>
<b>Notes:</b> <sup>1</sup> Jobs are FTE for a period of one year (1 FTE = 2,080 hours). <sup>2</sup> Earnings and output are expressed in millions of dollars in Year 2018 dollars.			

## **Tax Revenues**

Wind energy projects in the State of Ohio may be exempted from tangible personal property and real property tax payments if they meet certain conditions as provided in Ohio Revised Code (ORC) Section 5727.75. Qualified energy projects that receive this exemption are instead required to make annual PILOT payments. Annual PILOT payments are determined based on the size of the Project and the share of the construction workforce normally resident in the State of Ohio.

According to ORC 5727.75, tangible personal property of a qualified energy project using renewable energy resources is exempt from taxation for tax years 2011 through 2021 if all of the following conditions are satisfied:

- An application is filed for certification of the energy project as a qualified energy project with the director of the Ohio Development Services Agency on or before December 31, 2020.
- An application is filed with the Ohio Power Siting Board (OPSB) for a certificate under ORC section 4906.20.
- The county commissioners of a county in which the energy project is located either adopt a resolution approving the application submitted to the Ohio Development Services Agency or pass a resolution declaring the county an alternative energy zone (AEZ).
- Construction is initiated by January 1, 2021, with construction defined as either the date the application is filed with the OPSB or the date the contract for construction or installation is entered into, whichever is earlier.

If the applicant is granted an exemption from taxation from any of the tax years 2011 through 2021, the qualified energy project is also exempt from taxation for tax year 2022 and all following years.

Estimated PILOT "base" payments range from \$6,000 per MW of nameplate capacity for projects where the majority (75 percent or more) of total construction jobs (measured in FTEs) are filled by workers normally resident in Ohio to \$8,000 per MW for projects where Ohio residents account for a smaller share (50 to 60 percent) of total employment. PILOT payments are \$7,000 per MW of nameplate capacity for projects where 60 to 75 percent of the construction workforce consists of Ohio residents. Under ORC 5727.75, county commissioners may also require an additional service payment, with a combined service and PILOT ("base") payment not to exceed \$9,000 per MW.

The Board of Seneca County Commissioners adopted a resolution designating Seneca County as an AEZ in October 2011, with an annual service payment required in addition to the annual "base" payment of \$6,000 to \$8,000 per MW (Seneca County Commissioners' Office 2011). The amount of each service payment shall be the difference between \$9,000 and the "base" payment per MW required under ORC 5727.75. The funds derived from the "base" payment will be distributed to taxing districts in accordance with the applicable millage in the respective taxing districts, with the additional service payments dispersed as decided by the Board of County Commissioners (Seneca County Commissioners' Office 2011).

Seneca Wind anticipates that it will make payments in lieu of real and personal property taxes in accordance with the applicable statute (ORC 5727.75) and the Board of Seneca County Commissioners' 2011 resolution (Seneca County Commissioners' Office 2011). For the Project, with a nameplate capacity of 212 MW, the combined "base" and service payment of \$9,000 per MW will result in annual payments of \$1.91 million during its first year of operation, and each year thereafter. This estimated total of \$1.91 million is equivalent to 3.3 percent of total property tax revenues for all taxing jurisdictions in Seneca County, which were 58.4 million in 2017 (Ohio Department of Taxation 2017).

## **Conclusion**

The preceding analysis estimates the economic and fiscal impacts associated with construction and operation of the proposed Project at the local (Seneca County) and state levels. Impacts were estimated for each geographic area, state and county, using separate JEDI Wind Models. The results of this analysis indicate that construction and operation of the Project would provide direct employment for residents in Seneca County and elsewhere in-state, as well as support economic activity elsewhere in the local and state economies.

Overall, construction of the Project is estimated to support 795 total (Project Development and On-Site, Turbine and Supply Chain, and Induced) jobs in the State of Ohio, and approximately \$46.7 million in labor income, with total economic output of approximately \$132.6 million. In Seneca County, Project construction is estimated to support approximately 49 total jobs and approximately \$2.4 million in labor income, with total economic output of approximately \$7.6 million. Construction impacts would be one-time impacts that would occur only during construction.

Operation of the Project is estimated to support approximately 39 total (direct, indirect, and induced) jobs in the State of Ohio and approximately \$2.4 million in labor income, with total economic output of approximately \$7.8 million. In Seneca County, Project operation is estimated to support approximately 27 full-time jobs and approximately \$1.2 million in labor income, with total economic output of approximately \$4.6 million. These annual average impacts are expected to occur over the life of Project operation.

Seneca Wind anticipates that it will make payments in lieu of real and personal property taxes in accordance with the applicable statute (ORC 5727.75) and the Board of Seneca County Commissioners' 2011 resolution (Seneca County Commissioners' Office 2011), with the Project estimated to generate \$1.91 million in PILOT payments during its first year of operation, and each year thereafter. Seneca Wind also estimates that lease payments to landowners will total more than \$20 million over the life of the Project.

## **Qualifications of the Preparer**

This report was prepared by Matt Dadswell of Tetra Tech, with inputs provided by Seneca Wind LLC, as referenced in the report. Mr. Dadswell has a first class, joint honors, bachelor's degree in Economics and Geography from Portsmouth Polytechnic in England; a master's degree in Geography from the University of Cincinnati; and completed two years of doctoral study in Geography at the University of Washington. Mr. Dadswell has 24 years of experience preparing economic and social analyses for energy projects throughout the United States.

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**ADAMS TWP - BELLEVUE CSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =				TOTAL
3.63 X	\$9,000	\$32,670	3	\$98,010

To SENECA County General Fund  
 3.63X3 = 10.89 MW x 3 = 10.89      County GF portion      \$10,890

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%		GF take less from entities
1.90	County General Fund	2.8563	2.8563	\$2,799	\$311
8.70	Opportunity Center	13.0788	13.0788	\$12,819	\$1,424
41.60	Bellevue Schools	62.5376	62.5376	\$61,293	\$6,810
4.45	EHOVE Career Center	6.6897	6.6897	\$6,557	\$729
7.07	Adams Township	10.6284	10.6284	\$10,417	\$1,157
0.30	Health District	0.4510	0.4510	\$442	\$49
1.00	Bellevue Library	1.5033	1.5033	\$1,473	\$164
0.30	Commission on Aging	0.4510	0.4510	\$442	\$49
0.70	Mental Health & Recovery	1.0523	1.0523	\$1,031	\$115
0.50	County Park District	0.7517	0.7517	\$737	\$82
66.52		100.00		\$98,010	\$10,890
					\$87,120

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

**ADAMS TWP - CLYDE EVSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =				
3.63 X	\$9,000	\$32,670	X NUMBER OF TURBINES	TOTAL
			3	\$98,010
To SENECA County General Fund				
3.63X3=	10.89 MW x 3 =	10.89	County GF portion	\$10,890

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities
1.90	County General Fund	2.6218	2.6218	\$2,570
8.70	Opportunity Center	12.0050	12.0050	\$11,766
50.40	Clyde EVSD	69.5460	69.5460	\$68,162
1.60	Vanguard JVSD	2.2078	2.2078	\$2,164
7.07	Adams Township	9.7558	9.7558	\$9,561
0.30	Health District	0.4140	0.4140	\$406
1.00	Birchard Public Library	1.3799	1.3799	\$1,352
0.30	Commission on Aging	0.4140	0.4140	\$406
0.70	Mental Health & Recovery	0.9659	0.9659	\$947
0.50	County Park District	0.6899	0.6899	\$676
72.47		100.00		\$98,010
				\$10,890
				\$87,120

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

**ADAMS TWP - OLD FORT LSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =				
3.63 X	\$9,000	\$32,670	1	\$32,670
				TOTAL
				\$32,670
To SENECA County General Fund				
3.63X1=	3.63 MW x 1 =	3.63		County GF portion
				\$3,630

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities	
1.90	County General Fund	2.75	2.75	\$898	\$798
8.70	Opportunity Center	12.59	12.59	\$4,112	\$3,655
47.05	Old Fort LSD	68.07	68.07	\$22,238	\$19,769
1.60	Vanguard JVSD	2.31	2.31	\$756	\$672
7.07	Adams Township	10.23	10.23	\$3,342	\$2,970
0.30	Health District	0.43	0.43	\$142	\$126
1.00	Tiffin-Seneca Public Library	1.45	1.45	\$473	\$420
0.30	Commission on Aging	0.43	0.43	\$142	\$126
0.70	Mental Health & Recovery	1.01	1.01	\$331	\$294
0.50	County Park District	0.72	0.72	\$236	\$210
69.12		100.00		\$32,670	\$29,040

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

Apex - Republic Wind Project

**All amounts are calculated on the full tax rate**

Annual Service Payments ORC 5727.75.

$$MW \times \$9,000 =$$

3.63 X \$9,000

## MAX NUMBER OF TURBINES

4

7 \$228,690

TOTAL

**\$228,690**

**To SENECA County General Fund**

$$3.63 \times 7 = 25.41 \text{ MW} \times 7 = 25.41$$

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%		GF take less from entities
1.90	County General Fund	3.3557	3.3557	\$7,674	\$853 \$6,821
8.70	Opportunity Center	15.3656	15.3656	\$35,140	\$3,904 \$31,235
34.80	Seneca East LSD	61.4624	61.4624	\$140,558	\$15,617 \$124,942
1.60	Vanguard JVSD	2.8259	2.8259	\$6,462	\$718 \$5,744
7.07	Adams Township	12.4868	12.4868	\$28,556	\$3,173 \$25,383
0.30	Health District	0.5298	0.5298	\$1,212	\$135 \$1,077
0.75	Seneca East Library	1.3246	1.3246	\$3,029	\$337 \$2,693
0.30	Commission on Aging	0.5298	0.5298	\$1,212	\$135 \$1,077
0.70	Mental Health & Recovery	1.2363	1.2363	\$2,827	\$314 \$2,513
0.50	County Park District	0.8831	0.8831	\$2,020	\$224 \$1,795
56.62		100.00		\$228,690	\$25,410 \$203,280

Republic Wind Project - 14 Turbines  
ADAMS TOWNSHIP RECAP

	ADAMS TWP - BELLEVUE CSD	ADAMS TWP - CLYDE EVSD	ADAMS TWP - OLD FORT LSD	ADAMS TWP - SENECA EAST LSD	TOTALS
Generators	3	3	1	7	
\$1K to General Fund	\$10,890	\$10,890	\$3,630	\$25,410	\$50,820
County General Fund	\$2,488	\$2,284	\$798	\$6,821	\$12,392
Opportunity Center	\$11,394	\$10,459	\$3,655	\$31,235	\$56,743
Bellevue Schools	\$54,483				\$54,483
Clyde EVSD		\$60,588			\$60,588
Old Fort LSD			\$19,769		\$19,769
Seneca East LSD				\$124,942	\$124,942
EHOVE Career Center	\$5,828				\$5,828
Vanguard JVSD		\$1,923	\$672	\$5,744	\$8,340
Adams Township	\$9,259	\$8,499	\$2,970	\$25,383	\$46,112
Health District	\$399	\$361	\$126	\$1,077	\$1,957
Bellevue Library	\$1,310				\$1,310
Birchard Public Library		\$1,202			\$1,202
Tiffin-Seneca Public Library			\$420		\$420
Seneca East Library				\$2,693	\$2,693
Commission on Aging	\$393	\$361	\$126	\$1,077	\$1,957
Mental Health & Recovery	\$917	\$842	\$294	\$2,513	\$4,566
County Park District	\$655	\$601	\$210	\$1,795	\$3,261
	\$87,120	\$87,120	\$29,040	\$203,280	\$406,560

Information provided from Dalton Carr, Apex Clean Energy 4/10/18  
Julie A. Adkins, Seneca County Auditor  
Dated: May 11, 2018

**PLEASANT TWP - OLD FORT LSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75		
MW X \$9,000 =			TOTAL
3.63 X \$9,000	\$32,670	X NUMBER OF TURBINES	\$98,010
		3	

To SENECA County General Fund  
 3.63X3= 10.89 MW x 3 = 10.89 County GF portion \$10,890

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities	
1.90	County General Fund	2.8464	2.8464	\$2,790	\$310
8.70	Opportunity Center	13.0337	13.0337	\$12,774	\$1,419
47.05	Old Fort	70.4869	70.4869	\$69,086	\$7,676
1.60	Vanguard JVSD	2.3970	2.3970	\$2,349	\$261
4.70	Pleasant Township	7.0412	7.0412	\$6,901	\$767
0.30	Health District	0.4494	0.4494	\$440	\$49
1.00	Tiffin-Seneca Public Library	1.4981	1.4981	\$1,468	\$163
0.30	Commission on Aging	0.4494	0.4494	\$440	\$49
0.70	Mental Health & Recovery	1.0487	1.0487	\$1,028	\$114
0.50	County Park District	0.7491	0.7491	\$734	\$82
66.75		100.00		\$98,010	\$10,890
					\$87,120

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julia A. Adkins, Seneca County Auditor

Dated: May 11, 2018

Republic Wind Project - 3 Turbines  
**PLEASANT TOWNSHIP RECAP**

	<b>PLEASANT TWP - OLD FORT LSD</b>
Generators	3
<u>\$1K to Keneral Fund</u>	<u>\$10,890</u>
County General Fund	\$2,480
Opportunity Center	\$11,354
Old Fort	\$61,409
Vanguard JVSD	\$2,088
Pleasant Township	\$6,133
Health District	\$392
Tiffin-Seneca Public Library	\$1,305
Commission on Aging	\$392
Mental Health & Recovery	\$914
County Park District	\$653
	<b>\$87,120</b>

Information provided from Dalton Carr, Apex Clean Energy 4/10/18  
 Julie A. Adkins, Seneca County Auditor  
 Dated: May 11, 2018

**REED TWP - BELLEVUE CSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =		X NUMBER OF TURBINES		TOTAL
3.63 X	\$9,000	1	\$32,670	\$32,670
To SENECA County General Fund				
3.63X1	3.63 MW x 1 =	3.63	County GF portion	\$3,630

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities
1.90	County General Fund	2.8148	2.8148	\$920
8.70	Opportunity Center	12.8889	12.8889	\$4,211
41.60	Bellevue CSD	61.6296	61.6296	\$20,134
4.45	EHOVE JVSD	6.5926	6.5926	\$2,154
3.30	Reed Township	4.8889	4.8889	\$1,597
0.30	Health District	0.4444	0.4444	\$145
1.00	Bellevue Public Library	1.4815	1.4815	\$484
0.30	Commission on Aging	0.4444	0.4444	\$145
0.70	Mental Health & Recovery	1.0370	1.0370	\$339
0.50	County Park District	0.7407	0.7407	\$242
3.25	AVR Fire District	4.8148	4.8148	\$1,573
1.50	AVR Jr Ambulance District	2.2222	2.2222	\$726
67.50		100.00		\$32,670



**REED TWP - SENECA EAST LSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =				
3.63 X	\$9,000	\$32,670	9	\$294,030
				TOTAL
				\$294,030

To SENECA County General Fund				
3.63X9	32.67 MW x 9 =	32.67		County GF portion
				\$32,670

TURBINE AND MW DATA UPDATED FOR EACH				
Tax Rate			%	GF take less from entities
1.90	County General Fund	3.2986	3.2986	\$9,699
				\$1,078
				\$8,621
8.70	Opportunity Center	15.1042	15.1042	\$44,411
				\$4,935
				\$39,476
34.80	Seneca East LSD	60.4167	60.4167	\$177,644
				\$19,737
				\$157,906
1.60	Vanguard JVSD	2.7778	2.7778	\$8,168
				\$908
				\$7,260
3.30	Reed Township	5.7292	5.7292	\$16,845
				\$1,872
				\$14,974
0.30	Health District	0.5208	0.5208	\$1,531
				\$170
				\$1,361
0.75	Seneca East Public Library	1.3021	1.3021	\$3,829
				\$425
				\$3,403
0.30	Commission on Aging	0.5208	0.5208	\$1,531
				\$170
				\$1,361
0.70	Mental Health & Recovery	1.2153	1.2153	\$3,573
				\$397
				\$3,176
0.50	County Park District	0.8681	0.8681	\$2,552
				\$284
				\$2,269
3.25	AVR Fire District	5.6424	5.6424	\$16,590
				\$1,843
				\$14,747
1.50	AVR It Ambulance District	2.6042	2.6042	\$7,657
				\$851
				\$6,806
57.60		100.00		\$294,030
				\$32,670
				\$261,360

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

Republic Wind Project - 10 Turbines

**REED TOWNSHIP RECAP**

	REED TWP - BELLEVUE CSD 1	REED TWP - SENECA EAST LSD 9	TOTALS
Generators			
\$1K to General Fund	\$3,630	\$32,670	\$36,300
County General Fund	\$817	\$8,621	\$9,439
Opportunity Center	\$3,744	\$39,476	\$43,220
Bellevue CSD	\$17,898		\$17,898
Seneca East LSD		\$157,906	\$157,906
EHOVE JVSD	\$1,914		\$1,914
Vanguard JVSD		\$7,260	\$7,260
Reed Township	\$1,420	\$14,974	\$16,393
Health District	\$129	\$1,361	\$1,490
Bellevue Public Library	\$430		\$430
Seneca East Public Library		\$3,403	\$3,403
Commission on Aging	\$129	\$1,361	\$1,490
Mental Health & Recovery	\$301	\$3,176	\$3,477
County Park District	\$215	\$2,269	\$2,484
AVR Fire District	\$1,398	\$14,747	\$16,145
AVR Jt Ambulance District	\$645	\$6,806	\$7,452
	\$29,040	\$261,360	\$290,400

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

**SCIPIO TWP - SENECA EAST LSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments      ORC \$727.75  
 MW X \$9,000 =      X NUMBER OF TURBINES  
 3.63 X      \$9,000      \$32,670      10      \$326,700

TOTAL  
 \$326,700

To SENECA County General Fund  
 3.63X10      36.30 MW x 10 =      36.3      County GF portion      \$36,300

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%		GF take less from entities
1.90	County General Fund	3.2992	3.2992	\$10,778	\$1,198
8.70	Opportunity Center	15.1068	15.1068	\$49,354	\$5,484
34.80	Seneca East	60.4272	60.4272	\$197,415	\$21,934
1.60	Vanguard IVSD	2.7783	2.7783	\$9,077	\$1,009
6.50	Scipio Township	11.2867	11.2867	\$36,874	\$4,097
0.30	Health District	0.5209	0.5209	\$1,702	\$189
0.75	Seneca East Public Library	1.3023	1.3023	\$4,255	\$473
0.30	Commission on Aging	0.5209	0.5209	\$1,702	\$189
0.70	Mental Health & Recovery	1.2155	1.2155	\$3,971	\$441
0.50	County Park District	0.8682	0.8682	\$2,836	\$315
1.54	Bloom-Scipio It Amb District	2.6741	2.6741	\$8,736	\$971
57.59		100.00		\$326,700	\$36,300

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

Republic Wind Project - 10 Turbines

**SCIPIO TOWNSHIP RECAP**

	<b>SCIPIO TWP - SENECA EAST LSD</b>
Generators	10
<b>\$1K to General Fund</b>	<b>\$36,300</b>
County General Fund	\$9,581
Opportunity Center	\$43,870
Seneca East	\$175,479
Vanguard JVSD	\$8,068
Scipio Township	\$32,777
Health District	\$1,513
Seneca East Public Library	\$3,782
Commission on Aging	\$1,513
Mental Health & Recovery	\$3,530
County Park District	\$2,521
Bloom-Scipio Jt Amb Distric	\$7,766
	<b>\$290,400</b>

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

**THOMPSON TWP - BELLEVUE CSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments		ORC 5727.75		X NUMBER OF TURBINES		TOTAL	
MW X \$9,000 =							
3.63 X	\$9,000	\$32,670	14	\$457,380			
To SENECA County General Fund		50.82		County GF portion		\$50,820	
3.63X14	50.82 MW x 14 =						
TURBINE AND MW DATA UPDATED FOR EACH							
Tax Rate				%		GF take less from entities	
1.90	County General Fund	2.8379	2.8379	2.8379	\$12,980	\$1,442	\$11,538
8.70	Opportunity Center	12.9948	12.9948	12.9948	\$59,435	\$6,604	\$52,831
41.60	Bellevue CSD	62.1359	62.1359	62.1359	\$284,198	\$31,577	\$252,620
4.45	EHOVE JVSD	6.6468	6.6468	6.6468	\$30,401	\$3,378	\$27,023
7.50	Thompson Township	11.2024	11.2024	11.2024	\$51,238	\$5,693	\$45,544
0.30	Health District	0.4481	0.4481	0.4481	\$2,049	\$228	\$1,822
1.00	Bellevue Public Library	1.4937	1.4937	1.4937	\$6,832	\$759	\$6,073
0.30	Commission on Aging	0.4481	0.4481	0.4481	\$2,049	\$228	\$1,822
0.70	Mental Health & Recovery	1.0456	1.0456	1.0456	\$4,782	\$531	\$4,251
0.50	County Park District	0.7468	0.7468	0.7468	\$3,416	\$380	\$3,036
66.95		100.00			\$457,380	\$50,820	\$406,560

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

**THOMPSON TWP - SENECA EAST LSD**

Apex - Republic Wind Project

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =		X NUMBER OF TURBINES		TOTAL
3.63 X	\$9,000	\$32,670	3	\$98,010
To SENECA County General Fund				
3.63X3	10.89 MW x 3 =	10.89		County GF portion
				\$10,890

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities
1.90	County General Fund	3.3304	3.3304	\$3,264
8.70	Opportunity Center	15.2498	15.2498	\$14,946
34.80	Seneca East LSD	60.9991	60.9991	\$59,786
1.60	Vanguard JVSD	2.8046	2.8046	\$2,749
7.50	Thompson Township	13.1464	13.1464	\$12,885
0.30	Health District	0.5259	0.5259	\$515
0.75	Seneca East Public Library	1.3146	1.3146	\$1,288
0.30	Commission on Aging	0.5259	0.5259	\$515
0.70	Mental Health & Recovery	1.2270	1.2270	\$1,203
0.50	County Park District	0.8764	0.8764	\$859
57.05		100.00		\$98,010
				\$10,890
				\$764
				\$87,120

Information provided from Dalton Carr, Apex Clean Energy 4/10/18

Julie A. Adkins, Seneca County Auditor

Dated: May 11, 2018

Republic Wind Project - 17 Turbines  
**THOMPSON TOWNSHIP RECAP**

	THOMPSON TWP - BELLEVUE CSD	THOMPSON TWP - SENECA EAST LSD	TOTALS
Generators	14	3	
<b>\$1K to General Fund</b>	<b>\$50,820</b>	<b>\$10,890</b>	<b>\$61,710</b>
County General Fund	\$11,538	\$2,901	\$14,439
Opportunity Center	\$52,831	\$13,286	\$66,116
Bellevue CSD	\$252,620		\$252,620
Seneca East LSD		\$53,143	\$53,143
EHOVE JVSD	\$27,023		\$27,023
Vanguard JVSD		\$2,443	\$2,443
Thompson Township	\$45,544	\$11,453	\$56,998
Health District	\$1,822	\$458	\$2,280
Bellevue Public Library	\$6,073		\$6,073
Seneca East Public Library		\$1,145	\$1,145
Commission on Aging	\$1,822	\$458	\$2,280
Mental Health & Recovery	\$4,251	\$1,069	\$5,320
County Park District	\$3,036	\$764	\$3,800
	<b>\$406,560</b>	<b>\$87,120</b>	<b>\$493,680</b>

Information provided from Dalton Carr, Apex Clean Energy 4/10/18  
 Julie A. Adkins, Seneca County Auditor  
 Dated: May 11, 2018

**BLOOM TWP - BUCKEYE CENTRAL  
SPOWEE WIND PROJECT**

All amounts are calculated on the full tax rate

Annual Service Payments	ORC 5727.75			
MW X \$9,000 =				
55.92 X	\$9,000	\$503,280	1	\$503,280
				<b>TOTAL</b>
				\$503,280

To SENECA County General Fund:  
55.92X1 55.92 MW x 1 = 55.92

County GF portion \$55,920

**TURBINE AND MW DATA UPDATED FOR EACH**

Tax Rate			%	GF take less from entities
1.90	County General Fund	2.5836	2.5836	\$13,003
				\$1,445
8.70	Opportunity Center	11.8303	11.8303	\$59,540
				\$6,616
49.50	Buckeye Central LSD	67.3103	67.3103	\$338,759
				\$37,640
3.70	Pioneer JVSD	5.0313	5.0313	\$25,321
				\$2,813
6.40	Bloom Township	8.7027	8.7027	\$43,799
				\$4,867
0.30	Health District	0.4079	0.4079	\$2,053
				\$228
0.30	Commission on Aging	0.4079	0.4079	\$2,053
				\$228
0.70	Mental Health & Recovery	0.9519	0.9519	\$4,791
				\$532
0.50	County Park District	0.6799	0.6799	\$3,422
				\$380
1.54	Bloom-Scipio Jr Ambulance	2.0941	2.0941	\$10,539
		100.00		\$503,280
73.54				

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018



**SPOWER WIND PROJECT  
BLOOM TOWNSHIP RECAP**

	<b>BLOOM TWP - BUCKEYE CENTRAL</b>	<b>TOTALS</b>
Generators	1	
<b>\$1K to General Fund</b>	<b>\$55,920</b>	<b>\$55,920</b>
County General Fund	\$11,558	\$11,558
0		
Opportunity Center	\$52,924	\$52,924
0		
Buckeye Central LSD	\$301,119	\$301,119
0		
Pioneer JVSD	\$22,508	\$22,508
0		
Bloom Township	\$38,933	\$38,933
0		
Health District	\$1,825	\$1,825
0		
Commission on Aging	\$1,825	\$1,825
0		
Mental Health & Recovery	\$4,258	\$4,258
0		
County Park District	\$3,042	\$3,042
0		
Bloom-Scipio Jt Ambulance	\$9,368	\$9,368
	<b>\$447,360</b>	<b>\$447,360</b>

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018



**SPOWER WIND PROJECT  
EDEN TOWNSHIP RECAP**

	<b>EDEN TOWNSHIP - MOHAWK LSD</b>
Generators	1
<b>\$1K to Keneral Fund</b>	<b>\$50,560</b>
County General Fund	\$12,862
Opportunity Center	\$58,895
Mohawk LSD	\$273,828
Vanguard JVSD	\$10,831
Eden Township	\$30,463
Health District	\$2,031
Mohawk Library	\$5,415
Commission on Aging	\$2,031
Mental Health & Recovery	\$4,739
County Park District	\$3,385
	<b>\$404,480</b>

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018.

**All amounts are calculated on the full tax rate**

X NUMBER OF TURBINES	
1	\$530,910

**TOTAL**  
**\$530,910**

To SENECA County General Fund	58.99 MW x 1 =	58.99	County GF portion	\$58,990
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Tax Rate	GF take less from entities
%	

1.90	County General Fund	3.2986	3.2986	3.2986	\$17,513	\$1,946	\$15,567
8.70	Opportunity Center	15.1042	15.1042	15.1042	\$80,190	\$8,910	\$71,280
34.80	Seneca East LSD	60.4167	60.4167	60.4167	\$320,756	\$35,640	\$285,117
1.60	Vanguard JVSD	2.7778	2.7778	2.7778	\$14,748	\$1,639	\$13,109
3.30	Reed Township	5.7292	5.7292	5.7292	\$30,417	\$3,380	\$27,037
0.30	Health District	0.5208	0.5208	0.5208	\$2,765	\$307	\$2,458
0.75	Seneca East Public Library	1.3021	1.3021	1.3021	\$6,913	\$768	\$6,145
0.30	Commission on Aging	0.5208	0.5208	0.5208	\$2,765	\$307	\$2,458
0.70	Mental Health & Recovery	1.2153	1.2153	1.2153	\$6,452	\$717	\$5,735
0.50	County Park District	0.8681	0.8681	0.8681	\$4,609	\$512	\$4,097
3.25	AVR Fire District	5.6424	5.6424	5.6424	\$29,956	\$3,328	\$26,627
1.50	AVR Jt Ambulance District	2.6042	2.6042	2.6042	\$13,826	\$1,536	\$12,290
57.60		100.00			\$530,910	\$58,990	\$471,920

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018

**SPOWER WIND PROJECT  
REED TOWNSHIP RECAP**

	<b>REED TWP - SENECA EAST LSD 1</b>	<b>TOTALS</b>
Generators		
<u>\$1K to General Fund</u>	<u>\$58,990</u>	<u>\$58,990</u>
County General Fund	\$15,567	\$15,567
Opportunity Center	\$71,280	\$71,280
Seneca East LSD	\$285,117	\$285,117
Vanguard JVSD	\$13,109	\$13,109
Reed Township	\$27,037	\$27,037
Health District	\$2,458	\$2,458
Seneca East Public Library	\$6,145	\$6,145
Commission on Aging	\$2,458	\$2,458
Mental Health & Recovery	\$5,735	\$5,735
County Park District	\$4,097	\$4,097
AVR Fire District	\$26,627	\$26,627
AVR Jt Ambulance District	\$12,290	\$12,290
	<u>\$471,920</u>	<u>\$471,920</u>

Information provided from John Moran, Project Manager Spower  
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Dated: May 10, 2018

**SCIPIO TWP - SENECA EAST LSD**  
**SPOWER WIND PROJECT**

All amounts are calculated on the full tax rate

Annual Service Payments		ORC 5727.75		X NUMBER OF TURBINES		TOTAL	
MW X \$9,000 =		\$9,000		1		\$62,100	
6.9 X		\$62,100		6.9		\$6,900	
To SENECA County General Fund							
6.9X1		6.90 MW x 1 =		6.9		County GF portion	
TURBINE AND MW DATA UPDATED FOR EACH							
Tax Rate					%	GF take less from entities	
1.90	County General Fund	3.2992	3.2992	\$2,049	3.2992	\$228	\$1,821
8.70	Opportunity Center	15.1068	15.1068	\$9,381	15.1068	\$1,042	\$8,339
34.80	Seneca East	60.4272	60.4272	\$37,526	60.4272	\$4,168	\$33,358
1.60	Vanguard JVSD	2.7783	2.7783	\$1,725	2.7783	\$192	\$1,533
6.50	Scipio Township	11.2867	11.2867	\$7,009	11.2867	\$779	\$6,230
0.30	Health District	0.5209	0.5209	\$323	0.5209	\$36	\$287
0.75	Seneca East Public Library	1.3023	1.3023	\$809	1.3023	\$90	\$719
0.30	Commission on Aging	0.5209	0.5209	\$323	0.5209	\$36	\$287
0.70	Mental Health & Recovery	1.2155	1.2155	\$755	1.2155	\$84	\$671
0.50	County Park District	0.8682	0.8682	\$539	0.8682	\$60	\$479
1.54	Bloom-Scipio Jt Amb District	2.6741	2.6741	\$1,661	2.6741	\$185	\$1,476
57.59		100.00		\$62,100		\$6,900	\$55,200

Information provided from John Moran, Project Manager Spower  
 Julie A. Adkins, Seneca County Auditor  
 Dated: May 10, 2018

**SPOWER WIND PROJECT  
SCIPIO TOWNSHIP RECAP**

	<b>SCIPIO TWP - SENECA EAST LSD</b>
Generators	1
<b>\$1K to General Fund</b>	<b>\$6,900</b>
County General Fund	\$1,821
Opportunity Center	\$8,339
Seneca East	\$33,358
Vanguard JVSD	\$1,533
Scipio Township	\$6,230
Health District	\$287
Seneca East Public Library	\$719
Commission on Aging	\$287
Mental Health & Recovery	\$671
County Park District	\$479
Bloom-Scipio Jt Amb Distric	\$1,476
	<b>\$55,199</b>

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018





**SPOWER WIND PROJECT  
VENICE TOWNSHIP RECAP**

	<b>VENICE TWP - SENECA EAST LSD</b>	<b><u>TOTALS</u></b>
Generators	1	
<b>\$1K to General Fund</b>	<b>\$32,940</b>	<b>\$32,940</b>
County General Fund	\$8,559	\$8,559
Opportunity Center	\$39,190	\$39,190
Seneca East LSD	\$156,762	\$156,762
Vanguard JVSD	\$7,207	\$7,207
Venice Township	\$14,865	\$14,865
Health District	\$1,351	\$1,351
Seneca East Public Library	\$3,379	\$3,379
Commission on Aging	\$1,351	\$1,351
Mental Health & Recovery	\$3,153	\$3,153
County Park District	\$2,252	\$2,252
Attica Venice Cemetery	\$4,054	\$4,054
AVR Fire District	\$14,640	\$14,640
AVR Jt Ambulance District	\$6,757	\$6,757
	<b>\$263,520</b>	<b>\$263,520</b>

Information provided from John Moran, Project Manager Spower  
Julie A. Adkins, Seneca County Auditor  
Dated: May 10, 2018